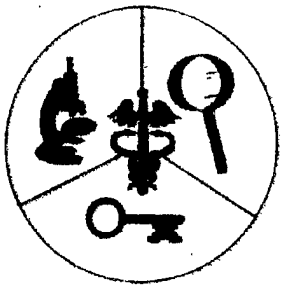

CENTER FOR
HEALTHCARE EDUCATION
AND STUDIES

Army Medical Department (AMEDD) /

Fort Campbell Staffing Study

By

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Contract Study

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FORT SAM HOUSTON, TEXAS 78234-6100

Army Medical Department (AMEDD) / Fort Campbell
Staffing Study

Prepared for

AMEDD

March 25, 1998

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AMEDD/Fort Campbell Staffing Study.

The goal of this study was to define maximally efficient staffing ratios between healthcare providers (e.g. physicians, physician assistants, and nurse practitioners) and support personnel (e.g. nurses, technicians, and others) in the peacetime healthcare delivery mission of the AMEDD.

We gratefully acknowledge the support and responsiveness of the Blanchfield Army Community Hospital staff throughout the development of this study.

Executive Summary

The Army Medical Department (AMEDD) has made great strides in achieving organizational efficiency. As Department of Defense resources are reduced to reflect changes in our national defense strategy, the AMEDD is closely examining the most labor intensive and costly part its mission - direct health care.

In August 1997, Booz·Allen & Hamilton was tasked to conduct the "Maximally Efficient Staffing Study". This task was comprised of two components. First, an in-depth literature review was conducted regarding current commercial health care staffing models and the most current trends in health care delivery. Second, the Booz·Allen Team developed a set of maximally efficient staffing models for a Military Treatment Facility (MTF). Models are included for active duty soldiers only, active duty soldiers and their dependents, and for all beneficiaries under sixty-five. For purposes of discussion, our report focuses on the process used to develop the model for all beneficiaries. The methodology is identical for the other two models. The models were developed using the Ft. Campbell health system as a baseline, but the methodology is transferable across MTF. This report discusses the methodologies used to develop the staffing models for:

- Providers
- Ambulatory support staff
- Inpatient support staff

The Booz·Allen approach to building these models was built on the premise that a given demographic population creates an expected demand for services, and that demand in turn drives a provider mix required to appropriately service the population. The number and types of providers necessary to meet the demand subsequently drives the structure of the overall health system. In addition, the staff necessary to support providers in an ambulatory setting is directly related to the number of providers actively seeing patients. As will be seen, development of the provider staffing model drives the development of the model for the support staff.

The first step in the methodology to develop the providers' model was to consider the demographics and health status of the population within Ft. Campbell's catchment area. Milliman & Robertson Inc. (M & R), examined the demographic information and provided us with expected utilization in both an optimally and loosely managed environment. An optimally managed organization is one in which most unnecessary care has been eliminated. In contrast, a loosely managed system is one in which there are no significant controls in place to manage utilization by its beneficiaries. The expected utilization provided by M&R gave us a baseline with which to compare the Ft. Campbell system's actual utilization. Utilization data was presented in terms of 18 product lines.

Upon obtaining expected utilization values for each product line in the catchment area, we compared the expected utilization with Ft. Campbell's actual utilization. M & R as

well as Ft. Campbell's utilization was adjusted based on the findings and writings of J.P. Newhouse and other researchers associated with RAND concerning the effects of free care, as well as the latest findings on demand management and its effect on curbing overuse of health services.

Using the American Medical Association's (AMA) national average physician productivity rates for commercial providers in the same geographic location as Ft. Campbell, we then derived a required provider mix for the population based on the 18 product lines. In addition, we assumed Ft. Campbell would not recapture a significant portion of the workload presently accounted for by the CHAMPUS system. As a result we adjusted the utilization downward to reflect this assumption. After the CHAMPUS adjustment was made, a provider staffing requirement was established.

Military providers have many unique responsibilities that their non-military counterparts do not. For this reason, we developed a "Military Unique Factor" (MUF) for the military providers in Ft. Campbell's health system. We obtained data regarding the time spent by both Professional Filler System (PROFIS) and non-PROFIS providers in various activities associated with the military profession. This time requirement was then translated into FTEs. A MUF was developed by dividing the FTEs needed to fulfill military responsibilities by the overall number of providers. For the providers, the MUF we derived is 1.10. This implies that 10% of a provider's time at Ft. Campbell is spent away from patient care in military unique responsibilities. Taking the CHAMPUS adjusted staffing requirement, the MUF is applied to that portion of the overall staff requirement filled by military providers.

To staff a hospital at its peak efficiency, we determined the number of military providers should be reduced to the minimum requirements associated with the wartime mission. In addition, the maximal use of physician extenders is recommended. The table below depicts the recommended number of physician and physician extender FTEs per product line.

Product Line	Optimal Civilian - Military Mix	Physician FTE	Physician Extender FTEs	Total Providers
General Practice/Family Practice	47.6	17.6	35.3	52.9
Internal Medicine	4.2	1.6	3.1	4.7
Cardiovascular Diseases	0.0	0.0	0.0	0.0
Other Internal Medicine	4.3	1.6	3.2	4.8
General Surgery	1.9	1.9	0.0	1.9
Otolaryngology	3.6	3.6	0.0	3.6
Orthopedic Surgery	3.9	3.9	0.0	3.9
Ophthalmology	3.3	3.3	0.0	3.3
Urological Surgery	1.0	1.0	0.0	1.0
Other Surgery	0.0	0.0	0.0	0.0
Pediatrics	7.7	2.9	5.7	8.6
Obstetrics/Gynecology	12.8	4.7	9.5	14.2

Product Line	Optimal Civilian - Military Mix	Physician FTE	Physician Extender FTEs	Total Providers
Emergency Medicine	5.7	2.2	4.4	6.6
Other Miscellaneous	3.9	1.4	2.9	4.3
Radiology	14.1	14.1	0.0	14.1
Psychiatry	12.8	4.8	9.5	14.3
Anesthesiology	5.6	2.1	4.1	6.2
Pathology	9.7	9.7	0.0	9.7
Total	**142**			**154**

Once a provider base was established, we then focused on the staff support required for providers in an ambulatory setting. The Medical Group Management Association Cost Survey provided us with ratios that compared the number and types of staff to support the provider community. The following table represents these ratios:

Staff Category	Median Number of Support Staff/FTE Provider
LPNs, Medical Assistants, etc.	.88
Medical Receptionists	.73
Registered Nurses	.44
Medical Secretaries	.28
Medical Records	.38
Business Office	.69
Laboratory	.35
General Administrative	.33
Housekeeping/Maintenance	.16
Managed Care Administration	.11
Information Management Services	.14
Physical Therapy	.08
Optical	.05
Other Medical/Ancillary Services	.22
Radiology	.22
Total Support Staff per FTE Provider	5.06

We applied these established ratios to the provider staff requirement developed in the previous section. Additionally, we developed a separate MUF for the ambulatory support staff and adjusted the requirement to reflect the military uniqueness of the health system in a similar fashion as the providers. The MUF for the support staff is 1.08. As with the providers the MUF is applied to that portion of the overall requirement filled by military support staff.

To staff a hospital at its peak efficiency, we determined the number of military support staff should be reduced to the minimum requirements associated with the wartime mission. The table below depicts the recommended number of support staff.

Support Staff	Number of Providers	Ratio	Staff FTEs	Number of Current Staff PROFIS	Civilian Staff	Optimal Civilian and Military Mix
LPNs, Medical Assistants, etc.	130.4	0.88	114.8	47.0	71.6	118.6
Medical Receptionists and Secretaries	154.2	1.01	155.7	0.0	155.7	155.7
Registered Nurses	124.2	0.44	54.6	0.0	54.6	54.6
Business Office	154.2	0.69	106.4	0.0	106.4	106.4
Laboratory	140.1	0.35	49.0	1.0	48.1	49.1
General Administrative	154.2	0.33	50.9	4.0	47.2	51.4
Managed Care Administration	154.2	0.11	16.9	1.0	16.0	17.0
Physical Therapy	102.1	0.08	8.2	1.0	7.3	8.3
Optical	85.3	0.05	4.3	0.0	4.3	4.3
Other Medical/Anciliary Services	154.2	0.22	33.9	6.0	28.4	34.4
Radiology	130.2	0.22	28.6	0.0	28.6	28.6
Total						628.4

The inpatient piece of the model was done in much the same manner as the ambulatory model. There are a myriad of inpatient models for staffing - most reflecting requirements through acuity levels experienced by the facility. We used an acuity approach in conjunction with ratio data from Hoechst Marion Roussel's Managed Care Digest Series regarding inpatient staff to occupied beds.

Given average acuity and census information from Blanchfield Army Community Hospital (BACH), the following table represents the required inpatient staff for a twenty four hour period.

	Daily Staffing Requirement			
Ward	RNs	LPNs	NAs	Total
4AB	5	2	4	11
2AB	7	6	5	18
2AA	3	3	0	6
2BB	4	3	0	7
Total	19	14	9	42

Once we determined the average twenty four hour nursing requirement for inpatient operations, we determined the amount of staff necessary to conduct continuous operations. We did this by multiplying the twenty four hour requirement by an industry ratio of 1.50. After applying the ratio and adding head nurse and ward master staff, the total nursing staff requirement for inpatient services equals 72.8. Additionally, we

weighed the industry standard staff to bed ratio (1.63 RNs and 0.33 LPNs) and found it to be consistent with the above calculations.

Our report concludes with appendices that address the use of physician extenders, demand management, and applicable RAND studies.

Table of Contents

1.0 Introduction ..... I - 1

1.1 Background 1
1.2 General Approach 1

2.0 Presentation of Provider Staffing Model ..... II - 1

2.1 Population Expected Utilization 1
2.2 Ft. Campbell's Health System Utilization 3
2.3 Recommended Provider Staffing Level (Non-Adjusted) 4
2.4 Utilization Adjustment Factor 5
2.5 Utilization Adjusted Provider Staffing Level 11
2.6 Direct Care Provider Staffing Level 12
2.7 Provider Military Unique Factor 13
2.7.1 Providers and PROFIS Identification 14
2.7.2 Developing the Provider Soldiering Factor 14
2.7.3 Developing the Provider PROFIS Factor 16
2.7.4 Development of the Military Unique Factor for Providers 17
2.8 Utilization of MUF 17
2.9 Maximally Efficient Provider Staffing Level 17

3.0 Presentation of Ambulatory Staff Methodology ..... III - 1

3.1 Support Staff Ratios in an Ambulatory Setting 1
3.2 Support Staff Military Unique Factor 2
3.2.1 Support Staff and PROFIS Identification 2
3.2.2 Developing the Staff Support Soldering Factor 3
3.2.3 Developing the Staff Support PROFIS Factor 4
3.2.4 Development of the Military Unique Factor for Staffing Support 4
3.3 Total Adjusted Staff Support Requirement 5
3.4 Maximally Efficient Support Staff 6

4.0 Presentation of Inpatient Staff Methodology ..... IV - 1

4.1 Support Staff Ratios in an Inpatient Setting 1
4.2 Total Adjusted Inpatient Nursing Staff Requirement 2

5.0 Findings ..... V - 1

6.0 Transfer of Methodology ..... VI - 1

7.0 Comments, Recommendations and Follow-On Study Ideas ..... VII - 1

Appendices

Appendix A - Actual Staffing Models ..... A - 1
Appendix B - Physician Productivity Data ..... B - 1
Appendix C - Demand Management and Rand Studies ..... C - 1
Appendix D - Military Unique Factor ..... D - 1
Appendix E - Physician Extenders ..... E - 1
Appendix F - Scatter Diagrams for Mission and CHAMPUS Related Utilization ..... F - 1
Appendix G - Bibliography ..... G - 1
Appdendix H - Ft. Campbell Population Demographics ..... H - 1

1.0 Introduction

This report outlines the logic and methodology used in the development of a maximally efficient model for staffing a military health system given a specific catchment area population. The model provides the U.S. Army Medical Command (MEDCOM) with a means for determining clinical staffing requirements based on expected utilization for a population based on trends found within a geographic region. The model will provide the leadership with a measure from which to base future decisions concerning staffing levels and utilization. Included with this report is a literature review and discussion of the most current trends in the health market. Also included in this report are discussions on the use of mid level professionals, demand management, and best practice support staffing ratios.

1.1 Background

In August 1997, Booz·Allen & Hamilton was tasked to conduct a "Maximally Efficient Staffing Study". This was composed of two sections. First, an in-depth literature review was conducted. The review included current commercial health care staffing models paying particular attention to those that stressed the most current trends in health care delivery, such as the use of mid-level (non-physician) providers. Second, the Booz·Allen Team developed a staffing model. The model was developed using the Ft. Campbell health system as a baseline, but is transferable across Military Treatment Facilities (MTF). Considerations for development of the model included such issues as military unique requirements and missions that make the military health system different from commercial health systems. In addition, the expanded role of primary care providers with less reliance on specialty care was included.

This task is one that is rooted in the sweeping changes that have been undertaken during this decade to move the Army Medical Department (AMEDD) into the future. Task Force Mercury and Task Force Aesculapius are two examples of the many efforts the AMEDD has undertaken to re-organize for greater efficiency. Over the past seven years, as the threat of Soviet aggression dissipated and National Defense Strategy changed, resources within the Department of Defense were reduced to reflect the change in the perceived threat. This environment may or may not continue, but prudence requires an examination of the most labor intensive piece of the AMEDD's mission - direct health care.

1.2 General Approach

The Booz·Allen approach was built on the premise that a health care system's supported population creates an expected demand for services, and the demand in turn drives a required provider mix to appropriately service the population. The number and types of providers necessary to meet the demand drives the structure of the overall health system. Our approach to building a model for a health system centered on three basic assumptions.

- Health care utilization can be predicted by population demographics and trends. The utilization determines health care provider requirements.
- There are specific cultural requirements on the military health system that make a military provider's yearly production different from his / her commercial counterpart.
- Provider staffing requirements can be projected using commercial utilization rates after appropriate adjustments are made for cultural and mission related factors.

Given these assumptions, we set out to gain an understanding of the expected utilization of the specific demographic population of the Ft. Campbell catchment area. Using our team member and actuarial expert, Milliman & Robertson, Inc. (M & R), we conducted six different analyses of expected optimally and loosely managed utilization for: active duty only, active duty and their dependents only, and the entire beneficiary population under sixty-five. The model does not take into consideration utilization for beneficiaries above sixty-five since they are seen in the direct care system on a space available basis and are not CHAMPUS eligible. For purposes of methodology description, discussion is focused on the model for the entire beneficiary population under sixty-five. In addition, this modeling effort does not take into consideration borrowed military manpower.

The loosely and optimally managed models are considered endpoints of a spectrum for managed care health delivery systems. For definition purposes, a loosely managed health care system is one that reflects utilization and cost levels representative of a system without significant management controls. An optimally managed system is at the opposite end of the spectrum. It is one where most unnecessary care has been eliminated through the use of managerial and educational processes. The optimally managed model is consistent with "best practice" performance.

M&R provided us with expected utilization data regarding 18 product lines. These product lines include the following specialties:

- Family Practice/General Practice
- General Internal Medicine
- Cardiovascular Disease
- Other Internal Medicine*
- General Surgery
- Otolaryngology
- Orthopedic Surgery
- Ophthalmology
- Urological Surgery
- Other Surgery**
- Pediatrics
- Obstetrics/Gynecology
- Emergency Medicine
- Other Miscellaneous***
- Radiology
- Psychiatry
- Anesthesiology
- Pathology

* - *Other Internal Medicine Includes the Specialties Of Allergy, Allergy And Immunology, Diabetes, Diagnostic Laboratory Immunology, Endocrinology, Gastroenterology, Geriatrics, Hematology, Immunology, Infectious Diseases, Nephrology, Nutrition, Medical Oncology, Pulmonary Disease, and Rheumatology.*

** - *Other Surgery Includes Neurosurgery, Plastic Surgery, Colon and Rectal Surgery, and Thoracic Surgery.*

**** - Other Misc. Includes Aerospace Medicine, Neurology, Nuclear Medicine, Occupational Medicine, Physical Medicine and Rehabilitation, General Preventive Medicine, Public Health, Dermatology, and Other Specialty Unspecified.*

Upon obtaining expected utilization values for each product line we compared the expected utilization with Ft. Campbell's experience. We compared the expected utilization against all product lines, and adjusted to reflect the expected utilization for the health system. We also took into account findings and writings of J.P. Newhouse and other researchers associated with the Rand Group concerning the effects on utilization rates without cost share requirements. We balanced that with the latest findings on demand management and its effect on curbing overuse of health services (See Chapter 2 and Appendix C for a discussion of demand management and the Rand Studies).

Using the American Medical Association's (AMA) national average physician productivity rates for commercial providers in the south central United States and information from other industry sources, we then derived a required provider mix for the population based on the 18 product lines.

For this effort, we assumed that the direct care system at Blanchfield Army Community Hospital (BACH) would not recapture a significant portion of the workload presently accounted for by the CHAMPUS system. Our assumption was that if a beneficiary left the direct care system to seek health care from a CHAMPUS provider, he/she would probably not return to BACH for further treatment. Therefore, we adjusted the required provider staffing level to meet non-CHAMPUS demand. If a MTF plans to recapture a percentage of CHAMPUS workload, this step can be altered accordingly. The resulting provider staffing requirement can be met using a combination of military and non-military providers.

Understanding that the military has many unique requirements that providers do not face in the commercial environment, we quantified a "Military Unique Factor" (MUF) for the military providers in Ft. Campbell's health system. We obtained data regarding the time spent in various activities associated with the military profession. We examined these requirements for four different groups; PROFIS providers and support staff, and non-PROFIS providers and support staff. The methodology for developing the factor was created in such a way as to be transferable from MTF to MTF, dependent upon the ratio of PROFIS providers to the overall military staff of the facility (a definitive explanation of the development of the MUF is found in chapters 2 for the provider staff and 3 for the support staff). We also included examples of how to use the MUF to determine the mix of civilian and military personnel to meet required FTEs.

Once a provider base was established, we then focused on the support staff. Our model provides an initial examination of the clinical support at the ambulatory and inpatient level. The MTF infrastructure - the overhead associated with establishing an inpatient facility (food service, housekeeping, finance, etc.) was not explored. The first staff development module centered around the staff support required for providers in an

ambulatory setting. The Medical Group Management Association Cost Survey provided us with ratios that compared the number and types of staff to support the provider community. We applied these established ratios to the provider staff requirement. This resulted in a required support staffing profile for the Ft. Campbell health care system. Again we developed a separate MUF for the ambulatory support staff and adjusted the requirement to reflect the military uniqueness of the health system.

The inpatient piece of the model was done in much the same manner as the ambulatory model. There are a myriad of inpatient models for staffing - most reflecting requirements through acuity levels experienced by the facility. We evaluated BACH's average acuity and census for each inpatient department in conjunction with ratio data from Hoechst Marion Roussel's Managed Care Digest Series regarding inpatient staff to bed.

We purposely did not attempt to create a staffing model that depicted each and every position within every department required for an MTF. Efforts are on going, through other contracting vehicles and tasks, to explore appropriate staffing levels for other specific departments within a MTF (e.g., Information Management Staffing Requirements).

Finally, we include in our report the following appendices:

- Appendix A: The actual staffing models for active duty only, active duty and their dependents, and all beneficiaries under the age of 65
- Appendix B: Physician productivity data provided by the AMA regarding commercial providers in the south central United States
- Appendix C: Discussion of demand management as well as relevant findings from Rand
- Appendix D: Description of the Military Unique Factor
- Appendix E: Discussion of the use of physician extenders including physician assistants and nurse practitioners
- Appendix F: Scatter Diagrams for Mission Related Utilization
- Appendix G: Ft. Campbell Demographics
- Appendix H: Bibliography.

2.0 Presentation of Provider Staffing Model

The following section provides a discussion of the provider staffing model. Each of the columns within the model corresponds to a step in the process and each section in this chapter corresponds to a specific column. There is a column for each of the following: population's expected utilization, Ft. Campbell's catchment area utilization (MTF as well as CHAMPUS data), recommended provider staffing level (non-adjusted), utilization adjusted factor, utilization adjusted provider staffing level, percentage CHAMPUS utilization, CHAMPUS adjusted provider staffing level, MUF for both PROFIS and non-PROFIS soldiers, and the MUF adjusted provider requirement.

Three versions of a maximally efficient staffing model are presented in Appendix A. These versions address the following categories:

1. Health care for Active Duty soldiers only
2. Health care for Active Duty soldiers and their families only
3. Health care for all beneficiaries under the age of sixty-five.

This chapter describes our methodology, and will be limited to discussions regarding the model appropriate for all beneficiaries (i.e., model #3), but is applicable to the other two models. Please refer to the model for all beneficiaries as we progress through the methodology.

2.1 Population Expected Utilization

As discussed, a basic assumption of this study is that the beneficiary population drives health care system utilization, and system utilization drives the necessary provider staffing levels. The actuarial firm Milliman and Robertson, Inc. (M&R) given the population characteristics of the Ft. Campbell catchment area, developed projections regarding system utilization and subsequent staffing levels for an optimally and a loosely managed health system. Their proprietary model takes into account the expected demand generated by the population, physician productivity rates per the AMA, and the effect of provider supply on the utilization rate of the population.

The services needed by the population within the Ft. Campbell catchment area are highly dependent upon several variables. Specifically, service utilization is a function of the member age and gender mix, member health status, and degree or level of health care management within its boundaries. M&R was given demographic data regarding the Ft. Campbell population in terms of age, sex, and beneficiary status (i.e., active duty, dependent of active duty, retired, dependent of retired, etc.). Specific demographic data for the Ft. Campbell health system is found in Appendix G. Health status, while an important factor, is very difficult to measure. For purposes of these projections, we have assumed a standard health status for all members.

Depending on the product line, the population utilization is measured in terms of the expected number of surgical procedures and/or office visits performed per year. Table 2.1 depicts the measures used for assessing the population utilization and hence, calculating the required provider staffing level for each product line.

Table 2.1
Measures Used to Calculate Population's Utilization

Specialty	Measures Used
Surgery Specialties (general surgery, orthopedic surgery, ophthalmology, etc.)	Expected office visits and surgical procedures
Cardiovascular Diseases	Expected office visits
Obstetrics / Gynecology	Expected office visits and surgical procedures
Emergency Medicine	Expected emergency room visits
Radiology	Expected radiology events
Psychiatric	Expected outpatient psychiatric / substance abuse events
Anesthesiology	Expected anesthesia events
Pathology	Pathology events
All Other (General Practice/Family Practice, General Internal Medicine, Other Internal Medicine, Pediatrics, Other Miscellaneous)	Expected office visits

Tables 2.2 and 2.3 below provide the expected utilization data for a loosely managed health system by product line, derived from the analysis of the beneficiary population within Ft. Campbell's catchment area. Table 2.3 does the same for those product lines for which office visits and surgical procedures are not the basis for measuring expected utilization.

Table 2.2
Utilization Data per Product Line (based on yearly data)

Product Line	Office Visits Per Year	Surgical Procedures Per Year (Where Applicable)
General Practice/Family Practice	154,107	
General Internal Medicine	27,654	
Cardiovascular Diseases	8,408	
Other Internal Medicine	64,299	
General Surgery	13,489	2,546
Otolaryngology	19,310	1,750
Orthopedic Surgery	15,594	3,037
Ophthalmology	6,809	420
Urological Surgery	5,137	1,128
Other Surgery	2,509	1,227
Pediatrics	55,945	
OB/Gyn	38,611	3,652
Emergency Medicine	12,931	
Other Misc.	7,458	

Note: 1. Other Internal Medicine Includes the Specialties Of Allergy, Allergy And Immunology, Diabetes, Diagnostic Laboratory Immunology, Endocrinology, Gastroenterology, Geriatrics, Hematology, Immunology, Infectious Diseases, Nephrology, Nutrition, Medical Oncology, Pulmonary Disease, And Rheumatology.
2. Other Surgery Includes Neurosurgery, Plastic Surgery, Colon and Rectal Surgery, And Thoracic Surgery.
3. Other Misc. Includes Aerospace Medicine, Neurology, Nuclear Medicine, Occupational Medicine, Physical Medicine and Rehabilitation, General Preventive Medicine, Public Health, Dermatology, Other Specialty, Unspecified.

Table 2.3
Utilization Data per Product Line (based on yearly data) - Continued

Product Line	Utilization
Radiology - (Includes radiodiagnostic, radiotherapy, consultations, and reading films)	96,148
Psychiatry - (Includes individual sessions, non-family group sessions, family group sessions, and office visits)	30,687
Anesthesiology - (Includes personal time, supervisory time, inpatient/pre-anesthesia visits, and office visits)	11,196
Pathology - (Includes surgical consults, examination of surgical specimen, non-surgical laboratory procedures, and autopsies)	172,312

2.2 Ft. Campbell's Health System Utilization

To obtain an accurate depiction of the actual health care utilization of Ft. Campbell's health system, we analyzed FY 97 direct care as well as FY 96 CHAMPUS data[1]. CHAMPUS data was obtained from the Patient Administration System and Biostatistical Activity (PASBA) and BACH Outcomes Management Branch (OMB). In addition, BACH's OMB provided us with direct care utilization data. This data was arranged and analyzed by office visits/surgical procedures, product lines, and beneficiary categories. MTF and CHAMPUS utilization were combined to determine the overall utilization within Ft. Campbell's catchment area. Table 2.4 below displays Ft. Campbell catchment area's actual utilization expressed in terms of the workload indicators shown in table 2.1.

Table 2.4
Ft. Campbell's Health System Utilization

Product Line	Utilization
General Practice/Family Practice	283,240
General Internal Medicine	26,436
Cardiovascular Diseases	1,533
Other Internal Medicine	20,998
General Surgery	8,538
Otolaryngology	21,639
Orthopedic Surgery	17,206
Ophthalmology	20,049
Urological Surgery	4,228
Other Surgery	913

[1] Complete FY 97 CHAMPUS data is not available. FY 96 and FY 97 CHAMPUS utilization will differ due to changes in BACH's business practices. FY 97 CHAMPUS data should be used when available.

Product Line	Utilization
Pediatrics	51,312
Obstetrics/Gynecology	66,064
Emergency Medicine	31,328
Other Miscellaneous	20,114
Radiology	191,489
Psychiatry	55,996
Anesthesiology	17,892
Pathology	326,330

2.3 Recommended Provider Staffing Level (Non-Adjusted)

The next component of the staffing model is defining productivity, or how many services can be provided to the population in a given year. In this context, productivity refers to the number of services produced per provider yearly. This information was developed based on information gained as a result of a recent AMA nationwide physician survey regarding productivity. The productivity per physician is formulated by multiplying the number of services provided per hour by the number of hours spent in that activity per week. This number is then multiplied by the number of weeks spent performing that activity per year. Please refer to Appendix B for AMA physician productivity statistics. As an example, Figure 2.1 depicts productivity data for one Family Practitioner in Ft. Campbell's geographic region. The same methodology is applied across all product lines.

Figure 2.1
Office Visit Productivity Data for Family Practice Provider in an Optimally Managed Environment.

Office Visits/Hour	Office Hours/Week	Weeks/Year	Total Office Visits/Year
3.020	38.3	47.7	5517.27

Source: American Medical Association

Based on the above components of population utilization and provider productivity, M&R derived a number of Full Time Equivalents (FTE) necessary to manage the population and its health care needs in an optimally managed environment. For example, given each product line's expected utilization (table 2.2), and the productivity of one FTE, Table 2.5 displays the recommended staffing level.

Table 2.5
Recommended Provider Staffing Level (Non-Adjusted)

Product Line	Recommended Staffing Level
General Practice/Family Practice	28.0
General Internal Medicine	5.8
Cardiovascular Diseases	2.1
Other Internal Medicine	14.9
General Surgery	4.0
Otolaryngology	3.7
Orthopedic Surgery	4.8
Ophthalmology	1.3

Product Line	Recommended Staffing Level
Urological Surgery	1.5
Other Surgery	1.8
Pediatrics	9.2
Obstetrics/Gynecology	8.6
Emergency Medicine	1.8
Other Miscellaneous	1.8
Radiology	7.5
Psychiatry	8.7
Anesthesiology	4.9
Pathology	5.4

2.4 Utilization Adjustment Factor

M&R's loosely managed utilization data is reflective of a commercial system that has not fully implemented demand management practices. We used the M&R loosely managed expected utilization to compare Ft. Campbell's health system with the actuarial data (our assumption for this effort was that although Ft. Campbell has made some strides in implementing a demand management program, their health system fit a loosely managed model). Each product line's expected utilization was compared with what was actually taking place within the Ft. Campbell health system.

For purposes of discussion, we have categorized the product lines into three categories:

- Primary Care: Family Practice/General Practice, General Internal Medicine, Obstetrics/Gynecology, Pediatrics, and Emergency Medicine
- Specialties: Cardiovascular Diseases, Other Internal Medicine, Other Miscellaneous, General Surgery, Otolaryngology, Orthopedic Surgery, Ophthalmology, Urological Surgery, and Other Surgery
- Ancillary Specialties: Radiology, Psychiatry, Anesthesiology, and Pathology..

The M&R data depicts utilization in a commercial setting under a loosely managed system. Ft. Campbell's utilization depicts a free care system under a loosely managed system. To compare the two, we adjusted the M&R data to reflect free care[2]. Specialty care product lines (general surgery, etc.) were not adjusted by a free care factor since their utilization depends on the management of the referral process within the health system. Ancillary product lines were adjusted for free care because their utilization has a direct relationship to the utilization of the primary care product lines.

Primary care product lines identified as outliers (e.g., Family/General Practice, OB/Gyn) were explored and adjusted. We defined a product line as an outlier if the Ft. Campbell health system utilization for that product line exceeded M&R expected adjusted utilization for that product line. To identify outliers, we compared the loosely managed

[2] Hosek, S, 1995: 1. Studies from Rand indicate up to a 40% increase in utilization in health care systems without cost sharing arrangements (i.e.. Free Care). Please refer to Appendix C for a discussion of Free Care.

M&R utilization adjusted for free care to Ft. Campbell's actual utilization. The difference represented that portion of Ft Campbell's utilization attributed to the military mission and culture (sick call, air assault training, etc.). In a commercial environment, employees that feel ill can choose whether to stay home, go to work, or whether or not to see their doctor. In the Army the soldier has no choice, he must go to sick call. Benficiaries in a commercial market are also less physically active. They do not do PT, rappel, conduct tactical exercises, or other activities leading to increased injury rates. In addition, the Army requires annual physicals, medical evaluation boards and numerous other medical requirements not found in the civil sector.

This mission related portion of Ft Campbell's utilization represents that portion that cannot be reduced through demand management practices. From that point, we reduced the non-mission related portion of Ft. Campbell's utilization by a demand management factor[3], then added back the mission related portion to obtain Ft. Campbell's demand management adjusted utilization.

To ensure the mission related portion of Ft. Campbell's utilization was due to mission activities rather than physician availability, we conducted a statistical analysis by product line. We did this to determine if a relationship existed between the monthly availability of providers and the resulting utilization. Using the statistical package, "SPSS For Windows", a linear regression analysis of these variables by product line is shown in the table below. As can be seen by the R square for each product line, the number of providers has minimal impact on the number of visits given the provider staff level over FY 97. In addition, none of the individual T- statistics for slopes are significantly different than zero. Given the data presented we found no significant pattern: However, since there were a limited number of data points, no conclusions can be drawn. Scatter diagrams and monthly summaries depicting workload and provider availability for each product line are included in Appendix F.

Table 2.6
Product Line Linear Regression Analysis

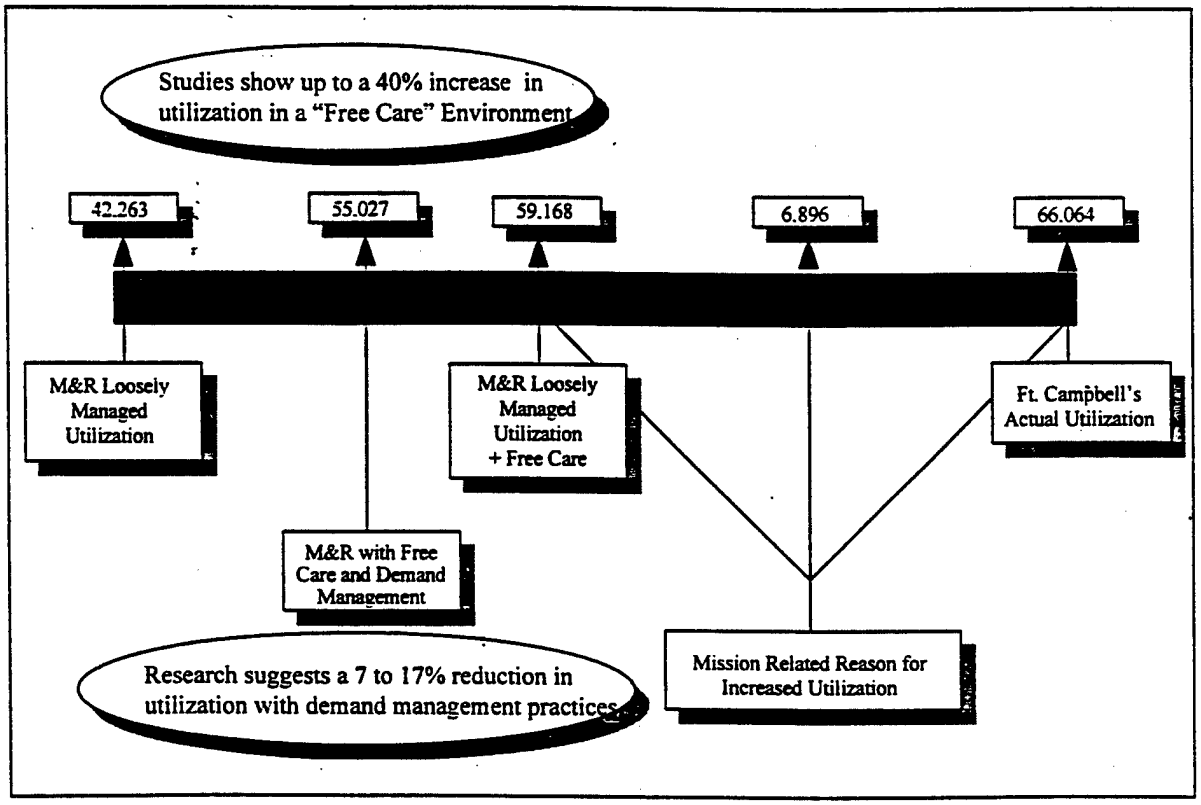
Product Line	R Square
Allergy	0.026
Dermatology	0.122
Emergency Medicine	0.003
Otolaryngology	0.339
Family Practice/General Practice	0.496
General Surgery	0.044
Internal Medicine	0.448
Neurology	0.192
OB/GYN	0.196
Opthalmology	0.162
Orthopedics	0.566
Pediatrics	0.004

[3]Kelly, 1997: 1. Studies show that implementing a demand management program can effectively reduce utilization by 7% or more. Please see Appendix C for a discussion of demand management practices.

Product Line	R Square
Psychiatry	0.217
Urology	0.070

By factoring in demand management we projected Ft. Campbell's optimally managed utilization. Then, we divided Ft. Campbell's optimally managed utilization into M&R's expected optimal utilization to derive an adjustment factor. To obtain the adjusted FTE requirement for each product line, we multiplied the adjustment factor by M&R's expected FTE requirement for an optimally managed health system. These steps are described in an example below. Figure 2.2 illustrates the relative value of OB/Gyn adjusted utilization.

Figure 2.2
Relative Value of OB/Gyn Adjusted Utilization



Primary Care Illustration

For a primary care illustration we use the OB/Gyn product line. The M&R data for the OB/Gyn product line is loosely managed and commercial. Ft. Campbell's utilization is assumed to be loosely managed, in a free care system. We must adjust the expected utilization given by M&R to reflect a free care environment in order to compare the two systems. The free care adjustment involves multiplying the M&R utilization by the free care factor (1.4, to reflect a 40% increase). The expected utilization within a loosely

managed commercial health system is 42,263 office visits and surgical procedures per year. This becomes 59,168 with the free care factor.

Loosely Managed Expected Utilization for OB/Gyn (M&R) =	42,263
Expected Utilization with "Free Care" factor =	42,263(1.4) = 59,168
Ft. Campbell's Actual Utilization	66,064

Ft. Campbell's OB/Gyn utilization, however, is 66,064 visits. The difference between Ft. Campbell's utilization and M&R's expected utilization adjusted for free care can not be reduced through demand management practices. We then find that portion of the Ft. Campbell utilization that can not be managed. We do that by finding the difference between the M&R expected utilization adjusted for free care and the Ft. Campbell actual utilization. In this case the difference is 6,896 office visits. The 6,896 office visits represent that portion of Ft. Campbell's utilization related to mission and culture that cannot be reduced through demand management programs. Using the 6,896 as the mission related utilization, we then adjust the remainder by a demand management factor (7%)[4].

Ft. Campbell Mission & Cultural Related Utilization =	66,064 - 59,168 = 6,896
Utilization Affected by Demand Management =	66,064 - 6,896 = 59,168
Ft. Campbell OB/Gyn Utilization Adjusted for Demand Management =	59,168 (0.93) = 55,027

Once we complete the demand management adjustment (multiplying by .93 to reduce the utilization by 7%), we add back the mission related utilization (6,896) to the demand management adjusted utilization (55,027). The resulting figure (61,922) reflects the utilization for OB/Gyn in an optimally managed free care system adjusted for the military mission and culture.

Optimally Expected Utilization for Ft. Campbell's OB/Gyn adjusted for Mission/Culture, Free Care, and Demand Management =	6,896 + 55,027 = 61,922
M&R Optimally Expected Utilization =	42,097
Utilization Adjustment Factor =	61,922/42,097 = 1.5
M&R Recommended FTE Staffing Level =	8.6
Utilization Adjusted FTE =	8.6(1.5) = 12.6

The final step in deriving the utilization adjustment factor is accomplished by taking the optimally expected utilization for the Ft. Campbell health system adjusted above (61,922) and dividing it by the M&R optimally expected utilization (42,097). The resulting factor (1.5) is then applied to the optimally managed FTE requirement identified by M&R to adjust for mission and free care factors associated with the Ft. Campbell health system.

[4] Please see Appendix C for a discussion of demand management practices.

Table 2.7 below displays this data for the primary care and applicable ancillary product lines.

Table 2.7
Utilization Adjustment for Primary Care and Applicable Ancillary Product Lines

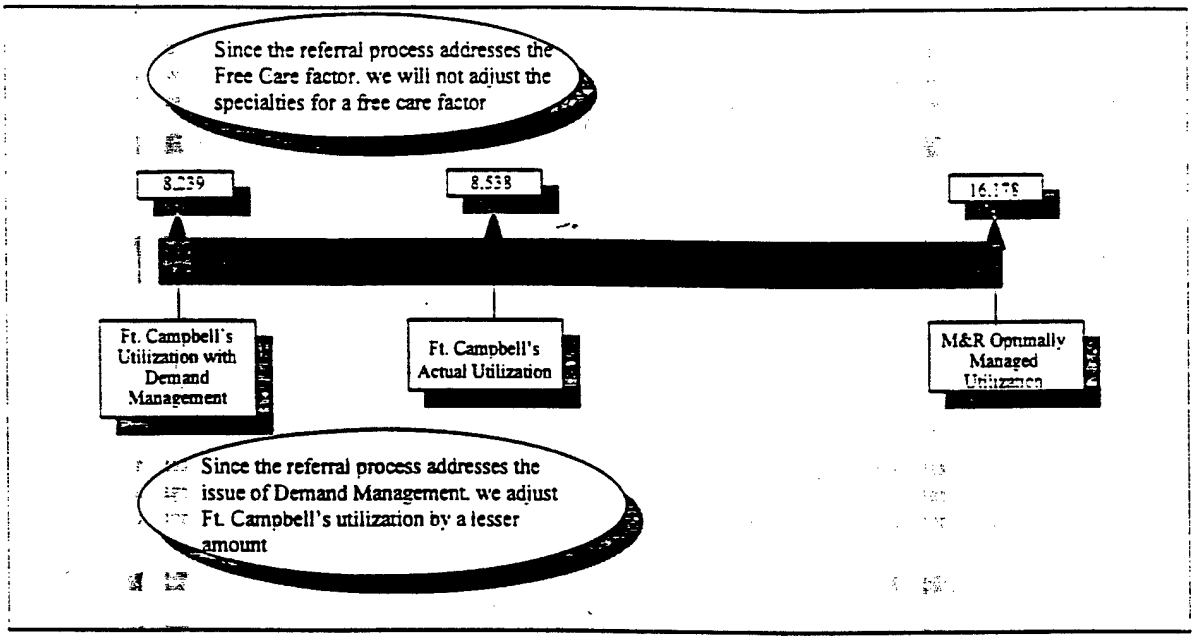
Product Line	M&R Optimally Managed Utilization	Ft. Campbell's Adjusted Utilization	Utilization Adjustment Factor
General Practice/Family Practice/Pediatrics	209.852	317.654	1.5
Obstetrics/Gynecology	42.097	61.922	1.5
Emergency Medicine	9.309	30.061	3.2
Radiology	96.148	182.067	1.9
Pathology	172.312	309.443	1.8

Specialty Product Line Illustration

Specialty product line utilization is not affected to the same degree by free care and demand management as primary care. For that reason we developed a slightly different approach in adjusting the specialty product line utilization for the Ft. Campbell health system. We identified Ft. Campbell catchment area's utilization for the specialty product lines. Once identified, we adjusted the Ft. Campbell product line utilization by a demand management factor (3.5%). Although referrals to the specialty product lines are managed through clinical practice guidelines in the primary care areas, there are still some components of demand management that can be implemented to reduce unnecessary medical treatment. For this reason, we reduced the demand management factor for the specialty product lines by one half.

Once the demand management factor has been applied to Ft. Campbell's product line's utilization, we divide the Ft. Campbell product line utilization by the M&R expected utilization in an optimally managed health system. The ratio is then applied to the M&R projected provider FTE requirement. These steps are described in an example below. Figure 2.3 illustrates the relative value of the General Surgery utilization data.

Figure 2.3
Relative Value of the General Surgery Utilization Data



For a specialty care product line illustration we use general surgery. M&R expected utilization for a optimally managed health system is a total of 16,178 office visits and surgical procedures. Ft. Campbell's actual utilization is 8,538. Applying the demand management factor of 3.5% to the Ft. Campbell utilization, adjusts the utilization to 8,239.

M&R optimally managed general surgery utilization =	16,178
Ft. Campbell Actual Utilization =	8,538
Demand Managed Utilization =	8,538(0.965) = 8,239

We then obtained a ratio between the expected M&R optimally managed utilization and the Ft. Campbell's demand managed utilization. This ratio is then applied to M&R's recommended FTE requirement to determine the utilization adjusted FTEs for Ft. Campbell.

Ratio of M&R to Ft. Campbell utilization =	8,239/16,178 = 0.51
M&R Recommended FTE =	3.97
Utilization adjusted FTE requirement =	3.97(0.51) = 2.0

For specialty product lines where Ft. Campbell's utilization is greater than M&R expected utilization in a loosely managed health system, we adjusted the utilization for mission and culture related factors. These specialties include ophthalmology, otolaryngology, other miscellaneous, anesthesiology, and psychiatry.

We use opthalmology as an example. Ft. Campbell's utilization is 20,049. M&R's expected utilization in a loosely managed health system is 7,229. We credit the difference between the two as mission related utilization that cannot be reduced through demand management practices. Therefore, we apply the 3.5% demand management factor only to that portion that is not mission related. We then obtain the utilization ratio as shown below. These calculations are shown below:

M&R loosely managed opthalmology utilization =	7,229
Ft. Campbell Actual Utilization =	20,049
Mission Related Utilization =	20,049 - 7,229 = 12,820
Demand Managed Utilization =	(20,049 - 12,820) (0.965) + 12,820 = 19,795
Ratio of M&R to Ft. Campbell utilization	19,795 / 7,268 = 2.7
M&R Recommended FTE =	1.3
Utilization adjusted FTE requirement =	1.3 (2.7) = 3.5

Table 2.8 represents the specialty product line utilization.

Table 2.8
Specialty Product Line Utilization

Product Line	M&R Optimal Provider FTE Level	Optimally Managed Expected Utilization	Ft. Campbell Adjusted Utilization	Utilization Ratio
General Internal Medicine	5.8	27,834	25,511	0.92
Cardiovascular Diseases	2.1	8,343	1,479	0.18
Other Internal Medicine	14.9	64,405	20,263	0.31
General Surgery	4.0	16,178	8,239	0.51
Otolaryngology	3.7	20,764	20,165	0.97
Urological Surgery	1.5	6,310	4,080	0.65
Other Surgery	1.8	3,746	881	0.24
Orthopedic Surgery	4.8	18,840	16,604	0.88
Ophthalmology	1.3	7,268	19,695	2.71
Psychiatry	8.7	30,421	54,922	1.81
Other Miscellaneous	1.8	7,500	19,853	2.65
Anesthesiology	4.9	11,196	17,500	1.56

2.5 Utilization Adjusted Provider Staffing Level

This column represents the necessary staffing levels for each product line after adjustments for free care and demand management are applied. Table 2.9 displays this data.

Table 2.9
Utilization Adjusted Provider Staffing Level

Product Line	Recommended Provider Staffing Level	Adjustment Factor	Utilization Adjusted Provider Staffing Level
General Practice/Family Practice	28.0	1.74	48.6
General Internal Medicine	5.8	0.92	5.3
Cardiovascular Diseases	2.1	0.18	0.4
Other Internal Medicine	14.9	0.31	4.7
General Surgery	4.0	0.51	2.0
Otolaryngology	3.7	0.97	3.6
Orthopedic Surgery	4.8	0.88	4.2
Ophthalmology	1.3	2.71	3.5
Urological Surgery	1.5	0.65	0.9
Other Surgery	1.8	0.24	0.4
Pediatrics	9.2	0.89	8.4
Obstetrics/Gynecology	8.6	1.47	12.6
Emergency Medicine	1.8	3.23	5.7
Other Miscellaneous	1.8	2.65	4.6
Radiology	7.5	1.89	14.2
Psychiatry	8.7	1.81	15.7
Anesthesiology	4.9	1.56	7.6
Pathology	5.4	1.80	9.7

2.6 Direct Care Provider Staffing Level

For this modeling effort we assumed that BACH would not recapture significant CHAMPUS workload. Given that assumption, we identified the percentage of the overall workload associated with CHAMPUS providers. We then reduced the direct care system's provider requirement accordingly[5].

To determine whether the CHAMPUS portion of Ft. Campbell's utilization was related to direct care physician availability, we conducted a statistical analysis by product line. We did this to determine if a relationship existed between the monthly availability of Ft. Campbell's providers and the resulting CHAMPUS utilization. Using the statistical package, "SPSS For Windows", a linear regression analysis of these variables by product line was conducted. As can be seen in Appendix F, the number of providers has minimal impact on CHAMPUS utilization given the provider staff level over FY 97. In addition, none of the individual T- statistics for slopes are significantly different than zero. Given this data we found no significant pattern. Scatter diagrams and monthly summaries depicting workload and provider availability for each product line are included in Appendix F. Table 2.10 reflects the provider staffing level required to meet the utilization demand of the direct care system only, before a military unique factor is applied.

[5] If an MTF expects to recapture a percentage of CHAMPUS workload, this step can be modified to reflect the percentage of recapture.

Table 2.10
Direct Care Provider Staffing Level

Product Line	Utilization Adjusted Provider Staffing Level	Percentage CHAMPUS Utilization	Direct Care Provider Staffing Level
General Practice/Family Practice	48.6	4.8	46.3
General Internal Medicine	5.3	27.1	3.9
Cardiovascular Diseases	0.4	92.8	0.0
Other Internal Medicine	4.7	7.5	4.3
General Surgery	2.0	5.7	1.9
Otolaryngology	3.6	1.4	3.6
Orthopedic Surgery	4.2	14.1	3.6
Ophthalmology	3.5	5.8	3.3
Urological Surgery	0.9	9.2	0.9
Other Surgery	0.4	100	0.0
Pediatrics	8.3	6.5	7.7
Obstetrics/Gynecology	12.6	1.0	12.4
Emergency Medicine	5.7	0.0	5.7
Other Miscellaneous	4.6	15.6	3.9
Radiology	14.2	0.1	14.1
Psychiatry	15.7	20.0	12.6
Anesthesiology	7.6	26.5	5.6
Pathology	9.7	0.0	9.7

2.7 Provider Military Unique Factor

To compare staffing requirements of commercial and military environments, it must be understood that a military provider has certain obligations a commercial provider does not. Some of these items include training exercises, deployments, and support to other installations. The following section outlines our methodology for quantifying the amount of time spent in these activities and how this time affects the staffing requirements within a military system. These factors are included in the next phase of FTE level calculations. To accurately display this time obligation, two separate factors are considered for both providers and non-providers. These are the soldiering factor and the PROFIS factor.

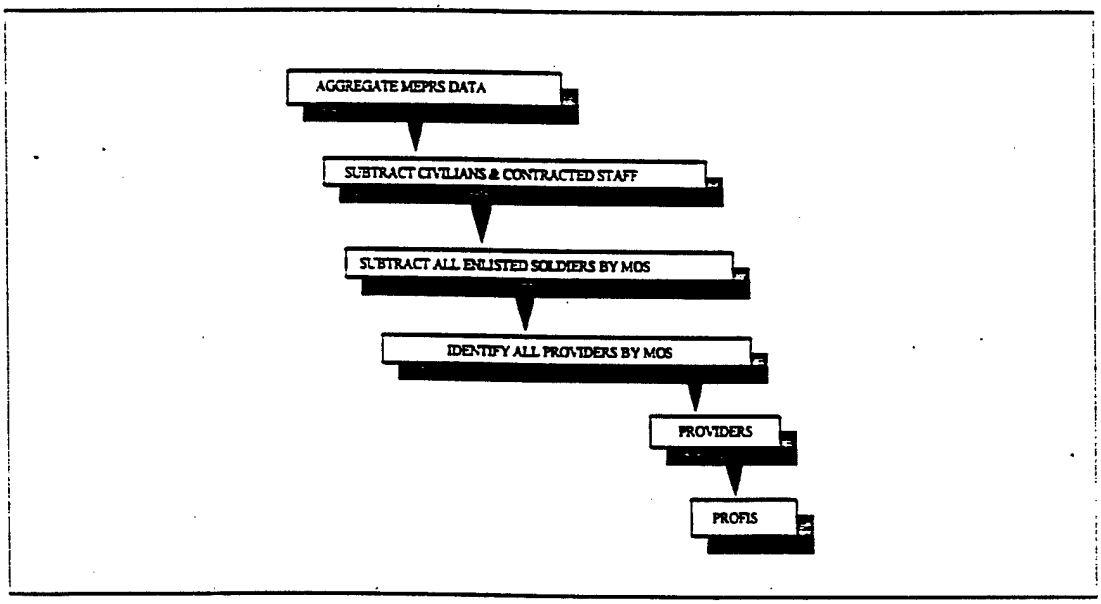
The following sections discuss how these factors are derived beginning with an analysis of the Medical Expense Personnel Reporting System (MEPRS) data to determine the actual number of providers at Ft. Campbell. Next a discussion is provided regarding the quantification of the Soldiering and the PROFIS factors, and concludes with a description of how these two ratios are combined to adjust the necessary staffing requirements for an MTF.

For purposes of discussion, the methodology below focuses on provider FTEs while recognizing the same methodology exists for the support staff's military unique factor (See Chapter 3).

2.7.1 Providers and PROFIS Identification

MEPRS data was provided by the Office of the Surgeon General, U.S. Army. This data includes time reported by all soldiers within BACH. To isolate military providers, we segmented the Ft. Campbell data. The first step was to exclude all civilian and contracted staff. Of the remaining staff, we only identified the officers corps. Then, we determined by Area of Concentration (AOC) which individuals were physicians, physician assistants, or nurse practitioners, nurse midwives, and/or nurse anesthetists. After all necessary segmentations of the data occurred, eighty-eight (88) military providers were identified. In addition, utilizing data from the Medical Training Education and Mobilization Division (M-TEAM), we ascertained that 43 providers were PROFIS. Figure 2.4 below graphically depicts this process.

Figure 2.4
Deriving Ft. Campbell's Providers



2.7.2 Developing the Provider Soldiering Factor

To determine the amount of time spent in military activities, we obtained data from Ft. Campbell's M-Team and the Patient Administration Division (PAD). This data consisted of time spent in training activities, deployments, professional schools, backfills to other installations, and medical boards. When this data was not available, we utilized other sources such as Army Regulation 350-4 to determine training requirements.

Table 2.11 represents the training activities and the associated hours spent in each session. To determine the FTE requirement to fulfill those obligations, the total number of hours was divided by 2016 (168 hours per month for twelve months).

Table 2.11
Training Session Time Requirements

Training Session	Who Attends	Frequency	Duration	Attendees	Total Hours
Common Task Testing (CTT)	All Soldiers	Annually	8 Hours	88	704
Hague-Geneva	All Soldiers	Annually	1 Hour	88	88
Code of Conduct	All Soldiers	Annually	1 Hour	88	88
Anti-terrorism	All Soldiers	Annually	1 Hour	88	88
PT testing	All Soldiers	Semi-annual	8 Hours	88	1408
Operational Security training and briefing (OPSEC)	All Soldiers	Annually	1 Hour	88	88
Subversion and Espionage Directed Against US Army	All Soldiers	Every 2 years	1 Hour	44	44
Refresher security training	All Soldiers	Annually	1 Hour	88	88
CBT Terrorist Training Plans	All Soldiers	Annually	1 Hour	88	88
Officer Professional Development Program	Officers	Quarterly	4	88	352
NBC	Officer	Once	15 Days	2	240
Other leadership (military)	Officer	Once	7 Days	2	112
CAS3	Officer	Once	63 Days	1	504
Officer Advanced	Officer	Once	63 Days	2	1008
Total Hours					4900
Number of FTEs (yearly)					2.43

The M-Team also provided us with data regarding the amount of time Ft. Campbell personnel were deployed as backfills to other installations. This data is represented in table 2.12.

Table 2.12
Backfills

Activity	Who Attends	Frequency	Duration	Attendees	Total Hours
Backfill to other installations	Officer	N/A	400 days	N/A	3200
Total Hours					3200
Number of FTEs (yearly)					1.59

PAD personnel at Ft. Campbell provided us with data regarding the amount of time needed to complete medical boards evaluations (MEB). Table 2.13

represents the services involved, the number of evaluations, and the time per evaluation.

Table 2.13
Medical Board Evaluations in Fiscal Year 1997

Service	Number of Evaluations	Time Per Evaluation	Total Time
Orthopedics	333	2 Hour	666 Hours
Medical	72	1 Hour	72 Hours
Psychiatric	19	1 Hour	19 Hours
Podiatry	39	1 Hour	39 Hours
Surgery	2	1 Hour	2 Hours
Neurology	35	1 Hour	35 Hours
Other	40	1 Hour	40 Hours
Total Time for MEBs			**873 Hours**
Number of FTEs (Yearly)			**0.43**

Through interviews at Ft. Campbell, we determined that the clinic chiefs provide direct patient care 80% of their available time. After all of the components were analyzed, we then added the total time in hours spent in military specific activities. This was, then, converted to a FTE and is displayed below:

Activity	Total Number of Hours	Corresponding FTE Calculation
Training Session	4900	2.43
Backfills to Other Installations	3200	1.59
Medical Board Evaluations	873	0.43
Clinic Chief Responsibility	2822	1.4
Totals	11795	5.85

To obtain a military soldiering factor, we then divided the FTE requirement of 5.75 by 88 (Number of military providers). **The soldiering factor for Ft. Campbell is 0.066.**

2.7.3 Developing the Provider PROFIS Factor

Taking the information obtained from the M-Team and 350-4, we calculated the PROFIS hours associated with the provider staff. Table 2.14 depicts the Provider PROFIS calculations. We then took the resulting hours and calculated the number of FTEs by dividing by 2016. The number of FTEs required to conduct the PROFIS mission was 3.06.

Table 2.14
Provider PROFIS Calculation

PROFIS Requirement	Who Attends	Frequency	Duration	Attendees	Total Hours
Orientation to Operational Unit	PROFIS	Upon Assignment	4 Hours	14.3	57.3
Soldier Readiness Processing	PROFIS	Annually	8 Hours	43	344
Weapons Training	PROFIS	Bi-Annually	8 Hours	21.5	172
Collective Training	PROFIS	Annually	75 Hours	43	3204
Deployments	PROFIS	Per Task	NA	43	2392
Total Hours					6169.3
Number of FTEs (yearly)					3.06

Using the mission associated FTEs as the numerator and the aggregate number of available PROFIS Provider FTEs the denominator, **the Provider PROFIS Factor is 0.071.**

2.7.4 Development of the Military Unique Factor for Providers

The development of the overall MUF for the providers requires a combination of the two factors: PROFIS and Soldiering. To do this we multiplied the PROFIS factor by 43/88 to determine the appropriate weighting. Calculations for the MUF are shown below.

Soldiering Factor =	0.066
PROFIS Factor =	0.071
Weighted PROFIS Factor =	(43/88)(0.071) = 0.035
MUF =	**1 + 0.066 + 0.035 = 1.10**

2.8 Utilization of MUF

The CHAMPUS adjusted staffing level indicates FTEs required to meet the population demands. Recognizing that MTFs are staffed with a mix of civilian as well as military providers, the following formula can be applied to determine the appropriate combination of civilians and military to meet the optimal level of FTEs in a product line.

$$1C + 0.91\,M = X \text{ providers,}$$

where

C = Civilian, M = Military,

2.9 Maximally Efficient Provider Staffing Level

To staff a hospital at its peak efficiency, the number of military providers should be reduced to the minimum requirements associated with the wartime mission. In addition, the maximal use of physician extenders is required. Table 2.15 depicts the recommended

number of physician FTEs per product line, the PROFIS FTE requirement, and the associated number of civilian providers.

Table 2.15
Optimal Mix of Military and Civilian Providers

Product Line	Physician FTEs	PROFIS FTE Requirements	Civilian Providers	Optimal Civilian - Military Mix
General Practice/Family Practice	46.3	15.0	32.6	47.6
General Internal Medicine	3.9	4.0	0.2	4.2
Cardiovascular Diseases	0.0	0.0	0.0	0.0
Other Internal Medicine	4.3	0.0	4.3	4.3
General Surgery	1.9	1.9	0.0	1.9
Otolaryngology	3.6	0.0	3.6	3.6
Orthopedic Surgery	3.6	3.0	0.9	3.9
Ophthalmology	3.3	0.0	3.3	3.3
Urological Surgery	0.9	1.0	0.0	1.0
Other Surgery	0.0	0.0	0.0	0.0
Pediatrics	7.7	0.0	7.7	7.7
Obstetrics/Gynecology	12.4	4.0	8.8	12.8
Emergency Medicine	5.7	3.0	2.9	5.9
Other Miscellaneous	3.9	0.0	3.9	3.9
Radiology	14.1	0.0	14.1	14.1
Psychiatry	12.6	3.0	9.8	12.8
Anesthesiology	5.6	5.6	0.0	5.6
Pathology	9.7	0.0	9.7	9.7
Total	**139.5**			**142.3**

A detailed discussion of current trends in the use of physician extenders is found in Appendix E. Table 2.16 displays the optimal use of physician extenders.

Table 2.16
Maximally Efficient Staffing Using Both Physicians and Physician Extenders

Product Line	Optimal Civilian - Military Mix	Physician FTE	Physician Extender FTEs	Total Providers
General Practice/Family Practice	47.6	17.6	35.3	52.9
Internal Medicine	4.2	1.6	3.1	4.7
Cardiovascular Diseases	0.0	0.0	0.0	0.0
Other Internal Medicine	4.3	1.6	3.2	4.8
General Surgery	1.9	1.9	0.0	1.9
Otolaryngology	3.6	3.6	0.0	3.6
Orthopedic Surgery	3.9	3.9	0.0	3.9
Ophthalmology	3.3	3.3	0.0	3.3
Urological Surgery	1.0	1.0	0.0	1.0
Other Surgery	0.0	0.0	0.0	0.0
Pediatrics	7.7	2.9	5.7	8.6
Obstetrics/Gynecology	12.8	4.7	9.5	14.2

Product Line	Optimal Civilian - Military Mix	Physician FTE	Physician Extender FTEs	Total Providers
Emergency Medicine	5.9	2.2	4.4	6.6
Other Miscellaneous	3.9	1.4	2.9	4.3
Radiology	14.1	14.1	0.0	14.1
Psychiatry	12.8	4.8	9.5	14.3
Anesthesiology	5.6	2.1	4.1	6.2
Pathology	9.7	9.7	0.0	9.7
Total	**142.3**			**154.1**

3.0 Presentation of Ambulatory Staff Methodology

As discussed in previous sections, a basic assumption of this study is that beneficiary population demographics drive health care system utilization, and that system utilization rates drive the provider staffing levels. In chapter two we developed a required provider staffing profile for the beneficiary population located in the Ft. Campbell catchment area. The basic assumption for this module of the staffing model is that there is a "best practice" staffing ratio between providers in an ambulatory setting and their required staff support. This chapter discusses these ratios and builds the required staffing support for providers in an ambulatory setting taking into consideration many of the same MUFs that applied to the providers.

3.1 Support Staff Ratios in an Ambulatory Setting

The ratios shown in Table 3.1 depict aggregate ratios derived from the 1995 Medical Group Management Association Cost Survey. The MTF at Ft. Campbell, as well the MTFs at other installations, encompasses both ambulatory clinic and inpatient practices. A blending effect on administrative support is created between the two settings. The requirement for clinical staff support by providers conducting ambulatory clinic operations remains, regardless of whether a clinic is operating within or outside the confines of a fixed hospital setting. The "best practice" ratios shown below are based on ambulatory clinic practices in a commercial setting.

Table 3.1
Support Staff per FTE Provider in an Ambulatory Setting

Staff Category	Median Number of Support Staff/FTE Provider
LPNs. Medical Assistants. etc.	.88
Medical Receptionists	.73
Registered Nurses	.44
Medical Secretaries	.28
Medical Records	.38
Business Office	.69
Laboratory	.35
General Administrative	.33
Housekeeping/Maintenance	.16
Managed Care Administration	.11
Information Management Services	.14
Physical Therapy	.08
Optical	.05
Other Medical/Ancillary Services	.22
Radiology	.22
Total Support Staff per FTE Provider	5.06

Simply stated, the provider mix established for the various product lines enables us to calculate the support staff requirement by multiplying the number of providers and applying a MUF for non-providers. The first step is to array the provider requirements by product line (adjusted for CHAMPUS utilization) and derive their respective staff support

by skill. For this illustration we show the requirements for RNs, LPNs, and medical receptionists. Table 3.2 shows this calculation.

Table 3.2
Aggregate Support Staff Requirement

Product Line	Required Provider FTEs	RN ratio	RN REQ	LPN/NA ratio	LPN/NA REQ	Med Recp ratio	Med Recp REQ
General Practice/Family Practice	46.3	.44	20.4	.88	40.7	.73	33.1
General Internal Medicine	3.9		1.7		3.43		2.8
Cardiovascular Diseases	0.0		0.0		0.0		0.0
Other Internal Medicine	4.3		1.9		3.8		3.1
General Surgery	1.9		.8		1.7		1.4
Otolaryngology	3.6		1.6		3.2		2.6
Orthopedic Surgery	3.6		1.6		3.2		2.6
Ophthalmology	3.3		1.5		2.9		2.4
Urological Surgery	0.9		0.4		0.8		0.7
Other Surgery	0.0		0.0		00.		0.0
Pediatrics	7.7		3.4		6.8		5.6
OB/Gyn	12.5		5.5		11.0		9.1
Emergency Medicine	5.7		2.5		5.0		4.2
Other Misc.	3.9		1.7		3.4		2.8
Psychiatry	12.6		5.5		11.0		9.2
Total FTEs (pure)	110.2		48.5		96.93		79.6

The result of the calculations in Table 3.2 provides the aggregate staff support requirement for the ambulatory health care operation of the system. This staff support requirement however, assumes that the health care system operates similarly to commercial health care systems and does not take into account a MUF. As in the process of determining the true provider requirements for the Ft. Campbell catchment area, there must also be a corresponding calculation of a MUF for the non-provider staff.

3.2 Support Staff Military Unique Factor

To determine the MUF for the military support staff, the same procedures were used as described in the previous chapter.

3.2.1 Support Staff and PROFIS Identification

Using the same MEPRS data and the hospital TDA that was used to obtain the provider MUF, we conducted a segmentation of the data to obtain the military support staff only. The first step was to delete all civilian and contracted staff. Using the MOS as the determining factor, we then deleted all providers. After the data was segmented, 303 military support staff remained. Utilizing M-TEAM PROFIS data, we then established a PROFIS and non-PROFIS assignment base. For the model there were 94 PROFIS and 209 non-PROFIS support staff at Ft. Campbell.

3.2.2 Developing the Staff Support Soldering Factor

We obtained data from BACH's M-TEAM to determine the amount of time spent in military activities not associated with direct patient care. This data consisted of time spent in training activities, deployments, and professional schools. When data was not available, we utilized other sources such as Army Regulation 350-4 to determine training requirements. Table 3.3 represents military training and other military related activities and the associated hours spent in each session.

Table 3.3
Training Session Time Requirements

Training Session	Who Attends	Frequency	Duration	Attendees	Total Hours
Common Task Testing (CTT)	All Soldiers	Annually	8 Hours	303	2424
Hague-Geneva	All Soldiers	Annually	1 Hour	303	303
Code of Conduct	All Soldiers	Annually	1 Hour	303	303
Anti-terrorism	All Soldiers	Annually	1 Hour	303	303
PT testing	All Soldiers	Semi-annual	4 Hours	303	2424
Operational Security training and briefing (OPSEC)	All Soldiers	Annually	1 Hour	303	303
Subversion and Espionage Directed Against US Army	All Soldiers	Every 2 years	1 Hour	151	151
Refresher security training	All Soldiers	Annually	1 Hour	303	303
CBT Terrorist Training Plans	All Soldiers	Annually	1 Hour	303	303
Officer Professional Development Program	Officers & EN	Quarterly	4	73	292
NCOPD	NCOs	Quarterly	2	30.5	61
NBC	Officer	Once	15 Days	2	480
Other leadership (military)	Officer	Once	7 Days	2	224
CAS3	Officer	Once	63 Days	1	504
Air Asslt School	All	Once	10 Days	21	1680
EFMB	All	Once	10 days	9	720
PLDC	Enlisted	Once	30 Days	13	3120
BNCOC	Enlisted	Once	55.25 Days	16	7072
ANCOC	Enlisted	Once	44 Days	1	352
AOD	Officer	Daily	365 Days	1	2920
CQ	Enlisted	Daily	365 Days	1	5840
Duty Driver	Enlisted	Daily	365 Days	1	5840
Total Hours					35,922
Number of FTEs (yearly)					17.82
Support Staff Soldiering Factor					0.059

To determine the needed FTE requirement to fulfill those obligations, the total number of hours was divided by 2016 (168 hours per month for 12 months). To obtain a military soldiering factor for the support staff, we then divided the 17.82 FTE requirement by 303 (Number of military support staff). **The Soldiering Factor for the support staff is 0.059.**

3.2.3 Developing the Staff Support PROFIS Factor

We developed the Staff Support PROFIS factor in a similar fashion as the Provider PROFIS Factor. Taking the information obtained from the M-TEAM and 350-4, we calculated the PROFIS hours associated with the support staff. Table 3.4 depicts the Staff Support PROFIS calculations.

Table 3.4
Staff Support PROFIS Calculation

PROFIS Requirement	Who Attends	Frequency	Duration	Attendees	Total Hours
Training					
Orientation to Operational Unit	All Soldiers	Annually	8 Hours	31.3	125.33
Soldier Readiness Processing	All Soldiers	Annually	8 Hours	94	752
Weapons Training	All Soldiers	Annually	8 Hours	47	376
Collective Training	All Soldiers	Annually	40 Hours	94	7004
Deployments					
Bosnia	All Soldiers	Per Task	179 Days	3	4296
Saudi Arabia	All Soldiers	Per Task	60 Days	2	960
Honduras	All Soldiers	Per Task	50 Days	2	800
Total Hours					14,313
Number of FTEs (yearly)					7.1
Staff Support PROFIS					0.076

To determine the needed FTE requirement to fulfill those obligations, the total number of hours was divided by 2016. To obtain the PROFIS factor for the support staff, we then divided the 7.1 FTE requirement by 94 (Number of PROFIS support staff). **The PROFIS Factor for the support staff is 0.076.**

3.2.4 Development of the Military Unique Factor for Staffing Support

The development of the overall MUF for the staffing support requires a combination of the two factors: PROFIS and Soldiering. To do this we used a simple weighting scheme. 94 of the 303 staff support personnel were PROFIS, therefore we multiplied the PROFIS factor by 94/303 to determine the appropriately weighted factor. Calculations for the MUF are shown below.

3.4 Maximally Efficient Support Staff

As described in Chapter 2, for maximal efficiency, the number of military staff should be limited to the PROFIS requirements. This is applicable for the support staff as well. The following section describes our methodology for calculating the most efficient use of civilian and military support staff.

To derive a maximally efficient support staff, we followed the same methodology described in Chapter 2. For each type of support staff category, we applied the best practice ratios to those providers who require that type of support. The total number of providers that we recommend in our optimal mix for maximally efficient staffing in all product lines at BACH is 154.2. We use 154.2 as a basis for applying the best practice ratios with a few exceptions. For example, LPNs and medical assistants are required in all product lines except pathology and radiology. Therefore, we subtracted those providers from the total (154.2 - 23.8 = 130.4) then applied the best practice ratio. We then calculated the civilian and provider mix as shown in section 3.3 above. For similarly adjusted product lines, explanations are shown below:

- **Registered Nurses:** Pathology, Radiology, and Anesthesia do not routinely require RN support.
- **Physical Therapy:** Otolaryngology, Opthalmology, Urological Surgery, Radiology, Anesthesia, Pathology, and Obstetrics do not routinely generate physical therapy workload.
- **Optical:** General Surgery, Otolaryngology, Orthopedics, Urological Surgery, Obstetrics, Radiology, Anesthesia, Pathology, and Psychiatry do not routinely generate optical workload.
- **Laboratory:** Radiology does not routinely generate laboratory workload.
- **Radiology:** Psychiatry, and Pathology do not routinely generate radiology workload.

Table 3.5 below shows the maximally efficient use of civilian and military support staff.

Table 3.5
Maximally Efficient Support Staff

Support Staff	Number of Providers	Ratio	Staff FTEs	Number of Current Staff PROFIS	Civilian Staff	Optimal Civilian and Military Mix
LPNs, Medical Assistants, etc.	130.4	0.88	114.8	47.0	71.6	118.6
Medical Receptionists and Secretaries	154.2	1.01	155.7	0.0	155.7	155.7
Registered Nurses	124.2	0.44	54.6	0.0	54.6	54.6
Business Office	154.2	0.69	106.4	0.0	106.4	106.4
Laboratory	140.1	0.35	49.0	1.0	48.1	49.1

Support Staff	Number of Providers	Ratio	Staff FTEs	Number of Current Staff PROFIS	Civilian Staff	Optimal Civilian and Military Mix
General Administrative	154.2	0.33	50.9	4.0	47.2	51.2
Managed Care Administration	154.2	0.11	16.9	1.0	16.0	17.0
Physical Therapy	102.1	0.08	8.2	1.0	7.3	8.3
Optical	85.3	0.05	4.3	0.0	4.3	4.3
Other Medical/Ancillary Services	154.2	0.22	33.9	6.0	28.4	34.4
Radiology	130.2	0.22	28.6	0.0	28.6	28.6
Total						628.2

4.0 Presentation of Inpatient Staff Methodology

Defining the appropriate nurse staffing levels and mixes of personnel in the United States has become very complex. Reasons for this include the following:

- Cost containment mandates have led to more selective use of services, including human resources
- Rapid development of technology
- Growth of sub-acute, long term, and home care capabilities
- Changes in the health care insurance market.

As outlined in the PACE Group literature review, there are a number of factors affecting inpatient staffing ratios, but one of most influential factors is cost. One way the health care industry has driven down inpatient costs is through the implementation of staff mix models. These models basically reduce the number of RNs used in the inpatient setting by using LPNs and Nurse Assistants to do many of the common tasks which do not require RN licensure.

Our basic assumption for this module, as with the ambulatory module, is that there is a "best practice" staffing ratio between beds and their required nursing support. However, this best practice ratio must be balanced with acuity. The Joint Commission for the Accreditation of Health Care Organizations (JCAHO) standards specifies that individual staffing needs be identified based on patient acuity. Additionally, JCAHO mandates that a plan be in place for providing nursing care based on the needs of the patients and the mission of the hospital. There are currently over 1,000 nurse staffing systems that are based on matching the patient needs with appropriate resources in order to meet JCAHO standards. Most of these models focus on patient acuity.

This chapter discusses the ratios and builds the required staffing support levels for the number of occupied beds, taking into consideration military unique factors and acuity.

4.1 Support Staff Ratios in an Inpatient Setting

The ratios shown in Table 4.1 depict aggregate ratios found through the 1997 Hoechst Marion Roussel Managed Care Digest Series (MMRMCDS). As one can determine from the table, there are a number of ratios based on whether hospitals own HMOs, are government facilities or are a part of a multi-hospital system. We chose to use the ratios regarding hospital owned HMOs as opposed to government multi-hospital ratios. The basis for that decision was primarily due to two factors. One, the original statement of work stated that the mix in Army health care facilities was not optimized. If we chose the government ratio, we may have perpetuated less than optimal staffing. The second decision point was that the MHS "owns" its own HMO care organization through the TRICARE structure.

Table 4.1
Nursing Staff Ratios for an Inpatient Setting

Inpatient Nurse Staff Support	1995 Hospital Staff Ratios for Multi-Hospital Systems
Registered Nurses	1.80
LPNs	.39
Inpatient Nurse Staff Support	1995 Government Multi-Hospital Systems
Registered Nurses	1.81
LPNs	.42
Inpatient Nurse Staff Support	1995 Hospital Staff Ratios for Multi-Hospital Systems
Registered Nurses	**1.63**
LPNs	**.33**

4.2 Total Adjusted Inpatient Nursing Staff Requirement

BACH's average occupied beds for FY 1997 was 48. Using the ratios above, the nursing staff required to support the beds, not taking into account acuity levels, is derived by multiplying the average occupied beds by the ratio. BACH's inpatient nurse requirement before a MUF adjustment is shown below.

Average Occupied Beds =	48
RNs = Average Occupied Bed Days * RN Ratio	48 * 1.63 = 78.2
LPNs = Average Occupied Bed Days * LPN Ratio	48 * 0.33 = 15.8

The result of the calculations above, gives one the aggregate nursing support requirement for the inpatient mission. This staff support requirement however, has not taken into account a MUF based on cultural events that require the military professional to spend time away from health care delivery functions. Step two of this module is applying the MUF (calculated for the non-provider staff in chapter 3) to the FTE requirements. The MUF for non-providers is shown below.

Soldiering Factor =	0.06
PROFIS Factor =	0.08
Weighted PROFIS Factor =	(94/303)(0.08) = 0.025
MUF =	1 + 0.06 + 0.024 = 1.084

1.084 represents the MUF for the Support Staff

Using the equation (1C + .92M = X), one can determine the appropriate mix of civilian and military personnel to achieve the required number of FTEs. An example is shown below for a 78.2 RN FTE requirement. Given 10 contract and 21 Department of the Army civilians, the requirement for military personnel is shown.

$$31C + 0.92M = 78.2$$
$$M = 51.3$$

For a mixed civilian and military staff at Ft. Campbell, 51.3 military RN's are required in addition to the 31 civilian RN's to meet the requirement for 78.2 RN FTEs.

These calculations give us a baseline for staffing BACH. However, as mentioned above, acuity must be a balancing factor for developing a staffing plan. To adequately staff an institution, the day-to-day patient care requirements must also be examined. The Workload Management System for Nursing (WMSN) used at BACH displays the nurse staffing requirements for the facility. We examined the average acuity for the specific inpatient departments and the subsequent staffing requirements.

In the medical surgical ward (4AB), the average census for FY 97 was 17 and the average patient acuity was approximately 2.83. Given average census and acuity data, the WMSN calculated the nursing requirement for the ward. 4AB required 11 nursing FTEs over a 24 hour period which included 5 RNs, 2 LPNs, and 4 Nurse Assistants (NA).

In the Mother-Baby unit (2AB), the average census was 28 and the average patient acuity was 2.3. Given average census and acuity, the WMSN calculated the nursing requirement for the ward. 2AB required 18 nursing FTEs over a 24 hour period which included 7 RNs, 6 LPNs, and 5 NAs.

In the special care nursery (2AA), the average census was 1 and the average patient acuity was 4.5. Given average census and acuity, the WMSN calculated the nursing requirement for the ward. 2AA required six nursing FTEs over a 24 hour period which included three RNs, three LPNs, and no NAs.

In the intensive care unit (2BB), the average census was 2.3 and the average patient acuity was 3.5. Given average census and acuity, the WMSN calculated the nursing requirement for the ward. 2BB required seven nursing FTEs over a 24 hour period which included four RNs, three LPNs., and no NAs. Table 4.2 summarizes these calculations.

Table 4.2
Inpatient Acuity Based FTE Requirements

Ward	Daily Staffing Requirement			
	RNs	LPNs	NAs	Total
4AB	5	2	4	11
2AB	7	6	5	18
2AA	3	3	0	6
2BB	4	3	0	7
Total	19	14	9	42

To determine the number of staff needed to conduct continuous operations on an ongoing basis, industry best practices suggest the required number of FTEs equal 1.30 to 1.50[6] times the number of FTEs needed daily.

[6] Industry practice obtained through BAH/PACE research.

Total 24 hour requirement	42
Applied ratio to total 24 hour requirement	42 (1.50) = 63.0
Head Nurses and Ward Masters	8+63.0 = 71.0

Examining the HMRMCDS ratios of 1.63 RNs to bed and 0.33 LPNs to bed (total nursing requirement of 94 FTEs), we determined that BACH's acuity level does not justify that level of staffing. Therefore, we recommend 71 FTE inpatient ward staffing requirements.

To obtain the optimal civilian and military mix for the inpatient staff requirements, we applied the same procedures as described for the providers and the ambulatory staff. Table 4.3 below displays these calculations.

Table 4.3
Optimal Inpatient Civilian and Military Mix

Staff	Inpatient FTE Requirement	PROFIS Requirement	Civilian FTE	Optimal Civilian and Military Mix
RN	32.5	23	11.3	34.3
LPN	25.0	0	25.0	25.0
NA	13.5	0	13.5	13.5
Total	71.0			72.8

5.0 Findings

As a result of this study, we identified a number of significant findings. These include the following:

1. The methodology the AMEDD uses for staffing hospitals does not take into consideration the latest staffing trends being used in industry. These include:
   - Maximum use of physician extenders in the primary care setting
   - Implementation of robust demand management practices which reduces unnecessary utilization and resulting staff requirements
   - Best practice physician to support staff ratios

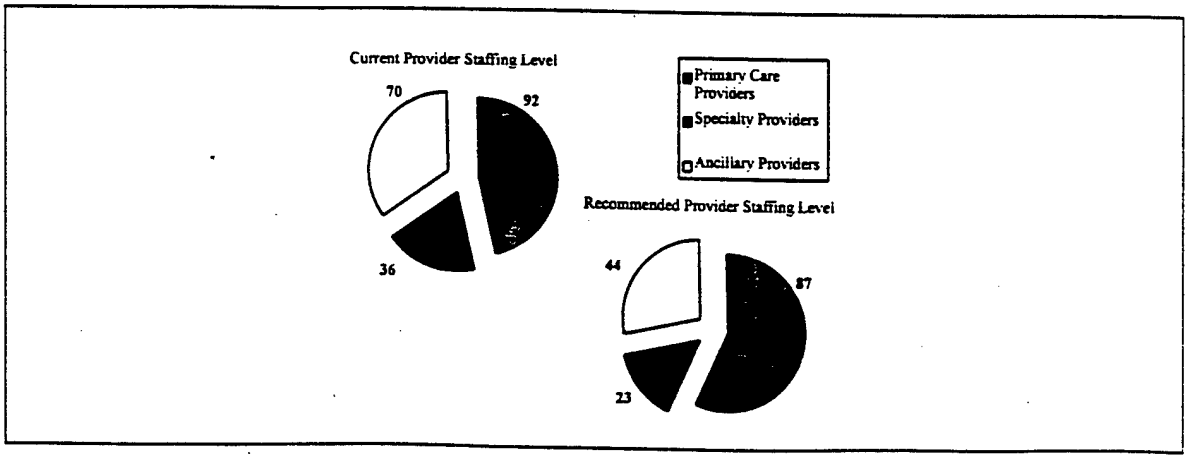
2. Government Provider Productivity does not compare favorably with commercial provider productivity. Reasons include:
   - Lack of support staff
   - Lack of incentive

3. Physician extenders provide high quality care and enhance productivity and health care delivery. Physician Extenders are 85% as productive as physicians and the quality of care is comparable.

4. Utilization data is deficient for purposes of this model.
   - The study used FY97 direct care data and FY 96 CHAMPUS data. This created an error in the model that is not defined
   - The data required to manipulate the model is not malleable.

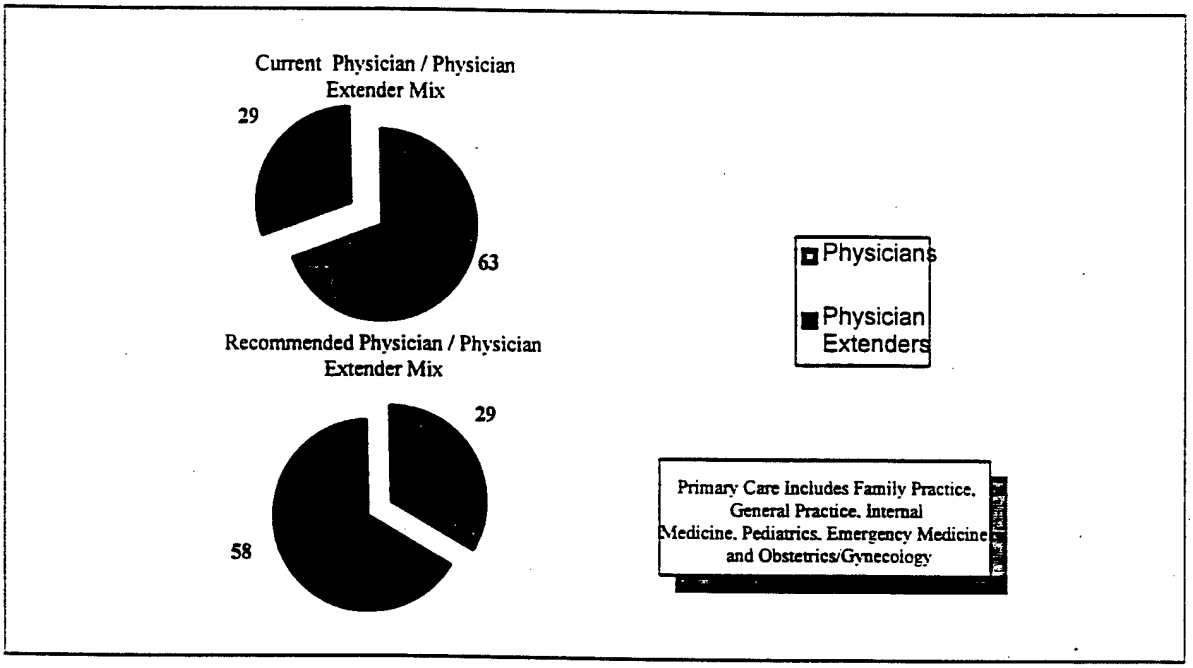
5. The figures below reflect the differences between the current staffing ratios and the recommended best practices. As can be seen, the recommended number of providers does not change significantly. The difference is in the proportion between primary care and specialty providers.

Figure 5.1
Provider Staffing Comparison



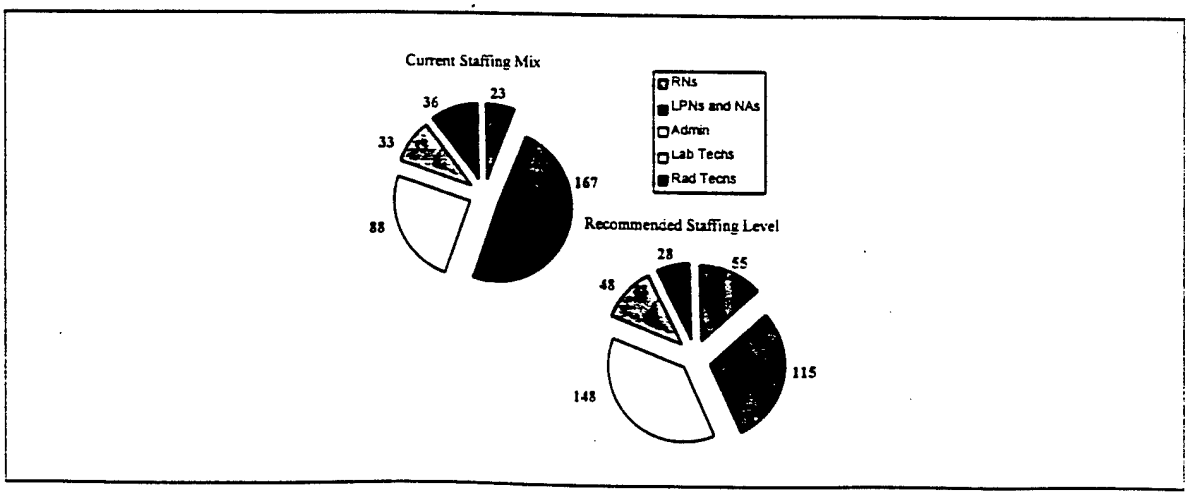
In the graph below, the upper pie depicts the mix of physician and physician extenders currently assigned to the primary care product lines at Ft. Campbell. The lower pie depicts the recommended mix. As can be seen, the number of providers does not vary, but the proportion of physicians to physician extenders changes significantly.

Figure 5.2
Primary Care Physician / Physician Extender Mix



The slide below shows the difference between the current and recommended support staff. As can be seen, the proportion changes to provide physicians with greater support. .

Figure 5.3
Ambulatory Staff Mix Comparison



6.0 Transfer of Methodology

The methodology above is transferable to any MEDDAC within the MEDCOM. To apply the methodology correctly to a MEDDAC other than Ft. Campbell, the following steps should be followed:

- **Catchment Area Population:** To derive the expected utilization, specific population demographics and geographical location should be provided to an actuarial firm for analysis. The report issued by the actuarial firm should identify expected utilization patterns for the specific population and geographic region.

- **Actual Population Utilization:** The actual population's utilization for the specific MEDDAC being modeled is required. The workload is used for comparison against the actuarial analysis. This data should be collected by month, by beneficiary category, by product line, and by CPT code.

- **Demand Management Factor:** Varying amounts of demand management practices currently exist within MEDDACs in the MEDCOM. An analysis should be performed to determine the strength of the demand management program for the specific MEDDAC being considered. Once the demand program for each MTF is understood the demand management factor should be applied appropriately.

- **Military Unique Factor:** Each facility will have a different military unique factor. Given the procedures outlined in Chapter II, a military unique factor should be developed for each specific MEDDAC.

- **Inpatient Nursing:** Using the MEDCOM's own acuity model, average inpatient census over the past year, and considering changes in inpatient health care delivery, an analysis should be performed as outlined in Chapter IV.

7.0 Comments, Recommendations and Follow-On Study Ideas

During the course of this task, several issues came to our attention that we feel would benefit from further analysis. Some of these directly relate to data existence, accessibility and validity. Other issues relate to observations we made regarding the overall operations within a MTF.

- **Utilization Data:** To correctly run this model, utilization data must be encapsulated according to product line, CPT code, age, and beneficiary category. To obtain utilization data regarding the Ft. Campbell health system, we received data from PASBA, BACH, OTSG, and OCHAMPUS. These multiple sources were required because no single source had the capability to collect all of the necessary components. Additionally, of the common data reported by each data source, each data set contained significantly different information. In addition, the expected utilization we received from M&R reflected the demand for services generated by the population inside the catchment area. The Ft. Campbell utilization data reflected all utilization of the direct care system regardless of whether the beneficiary lived inside or outside the catchment area. Neither PASBA nor BACH could isolate utilization generated from within the catchment area. We had no way of determining whether the utilization generated outside Ft. Campbell's catchment area was significant.

  We recommend that the MEDCOM and each MTF develop methodologies through existing information systems to collect and maintain the necessary data in one source. We feel that the Corporate Executive Information System (CEIS) may contribute to the efficiency of this data collection, but until deployment alternate steps will be necessary.

  To compound the dilemma, for the purposes of this study we used FY97 direct care workload data and FY96 CHAMPUS workload data. Use of FY96 CHAMPUS data was unavoidable due to the shortcomings in the FY97 data. There is no estimate in the error that may result by using the two different years for the Ft. Campbell workload indicators.

- **Workload Data:** To quantify time spent in non-patient care related military unique activities, we relied on Ft. Campbell's MTEAM, PAD and Personnel Divisions, and AR 350-4. MEPRS data differed significantly. Government sources indicated MEPRS data was inaccurate when analyzing FTE and provider hours. Given this information we used non-MEPRS data sources. MEPRS data must be accurate since it is authoritative. A concerted effort must be taken to ensure MEPRS data accurately reflects what is occurring in the MEDCOM.

- **Military Unique Factor:** The military unique factor developed in this model was calculated generically for providers and non-providers. A better method to measure the effect of military unique activities on a MTF would be to develop a MUF by MOS

and product line. Currently data does not exist to support this analysis by MOS and product line. We recommend MTFs initiate data collection methods to capture military unique activities by MOS and product line (deployments, training, etc.).

- **Model Applicability:** The scope of the task was limited by budget constraints to one facility. As a result the methodology developed is transferable to any MEDDAC but is not applicable to a GME facility. Subsequently, we recommend conducting a similar study of a teaching hospital or medical center.

- **Applicability of This Methodology in Light of Other Staffing Models:** This model must be evaluated in comparison with other existing staff models to get a full understanding of the implications of implementing this methodology. These include but are not limited to the MCFAS Model, the ASAM Model, Enrollment Based Capitation, etc.

Based on interviews with providers and other health care professionals at BACH, several issues came to our attention that need to be addressed in the near term. These issues are not specific to Fort Campbell, or any single MTF, but are common themes across the MHS.

- **Excess Capacity**: For military installations that are in close proximity to each other, is there adequate justification for spending resources to provide inpatient services at each military installation? We feel there is a potential to realize significant savings by eliminating costly inpatient services through consolidation or use of commercial providers. For example, in the National Capital Region, there are four inpatient facilities (Walter Reed Army Medical Center, National Naval Medical Center, Malcolm Grow, and Dewitt Army Community Hospital). All facilities are operating well below their inpatient capacity. We recommend a business case analysis to determine whether current operations are justified and whether inpatient operations should be consolidated or eliminated within each region.

- **Business Process Re-engineering (BPR):** Is the administrative structure in Army MTFs duplicative and inefficient? In today's TRICARE environment, the MTF administrative structure should be structured to provide streamlined and efficient processes. An analysis should be conducted to determine whether traditional modes of operations should continue. We believe the old organizational structure that isolates administrative staff (Patient Administration, Resource Management, and Clinical Support Divisions) and builds organizational friction should be replaced with a streamlined staff. Combining one or more of these divisions would lead to cost savings and increased efficiencies within the system.

- **Pharmacy:** Are MTF pharmacies staffed and operated in the most efficient manner? An overall study of pharmacy processes and operations should be conducted to determine the most efficient manner of providing services. In addition, this study

should identify processes that should be standard throughout the MEDCOM. These standard practices should then be applied to all MEDCOM pharmacies.

- **Appropriate Use of Primary and Specialty Care Providers:** Are specialty providers conducting medical procedures that could be accomplished in a primary care environment? An analysis of the Army's specialty care utilization should be performed to determine if medical specialty resources are appropriately used. Additionally, if there is a significant amount of primary care work performed at the specialty level, a potential increase in primary care providers should be considered in conjunction with a potential reduction in specialists.

- **Medical Evaluation Boards (MEB):** What is the standard procedure in the Army for processing medical evaluation boards? We feel the MEB process takes a significant percentage of specialty provider time away from patient care. At Ft. Campbell the amount of time spent on orthopedic MEBs over one year translates to over 1,500 outpatient visits. Through process re-engineering an improved MEB process could increase provider productivity significantly.

- **Productivity Data:** Is there a compelling reason for the difference between commercial and military provider productivity? We feel that provider productivity within the MEDCOM should be evaluated and internal inefficiencies eliminated in light of commercial competitors.

- **Effciency in Providing the Medical Benefit From a Management Perspective.** There are a number of external and internal drivers that have an effect on a facility's ability to efficiently manage their production capability. Poor communications systems, archaic management structures, and overall system processes (appointment "no shows", etc.) degrade productivity. How does one avoid the "no show" problem? What incentives are there to increase provider productivity to a level equivalent with commercial vendors? Why are the administrative management departments organized as they were fifteen years ago when the practice of managed care has dictated change? The AMEDD needs to take the opportunity to conduct an innovative reengineering initiative of management function and process within their fixed facilities.

APPENDIX A
MAXIMALLY EFFICIENT STAFFING MODEL FOR ACTIVE DUTY SOLDIERS, ACTIVE DUTY SOLDIERS AND THEIR DEPENDENTS, AND ALL BENEFICIARIES

Model
for
All Beneficiaries

[illegible] Product Line	[illegible] M&R Loosely Managed Expected Utilization	[illegible] CHAMPUS [illegible] Utilization [illegible]	Expected [illegible] (N/A)	[illegible] Mission Related Utilization	Non-Mission Utilization DM (d [illegible] for Specialties)	Total Adjusted [illegible] Utilization (Optimized)	M&R Optimally Managed Expected Utilization	[illegible] Utilization Adjustment Factor	Recommended Provider Staffing Level (Not [illegible] Adjusted)	Utilization Adjusted Provider Staffing Level	Percentage CHAMPUS Utilization [illegible]	Military Provider Staffing [illegible] CHAMPUS Staffing)	Military Unique Factor [illegible]	[illegible]
General Practice/Family Practice	154,107	283,240.0	215,750	67,490	200,647	268,138	154,495	1.736	28.00	48.60	4.80%	46.27	1.10	
Internal Medicine	27,654	26,436.0	27,654	(1,218)	25,511	25,511	27,834	0.917	5.80	5.31	27.11%	3.87		
Cardiovascular Diseases	8,408	1,533.0	8,408	(6,875)	1,479	1,479	8,343	0.177	2.14	0.38	92.82%	0.03		
Other Internal Medicine*	64,299	20,998.0	64,299	(43,301)	20,263	20,263	64,405	0.31	14.9	4.7	7.47%	4.3		
General Surgery	16,035	8,538.0	16,035	(7,497)	8,239	8,239	16,178	0.51	4.0	2.0	5.66%	1.9		
Otolaryngology	21,060	21,639.0	21,060	579	19,586	20,165	20,764	0.97	3.7	3.6	1.38%	3.6		
Orthopedic Surgery	18,631	17,206.0	18,631	(1,425)	16,604	16,604	18,840	0.88	4.8	4.2	14.06%	3.6		
Ophthalmology	7,229	20,049.0	7,229	9,928	9,766	19,695	7,268	2.71	1.3	3.5	5.83%	3.3		
Urological Surgery	6,263	4,228.0	6,263	(2,035)	4,080	4,080	6,293	0.65	1.5	1.0	9.20%	0.9		
Other Surgery**	3,736	913.0	3,736	(2,823)	881	881	3,746	0.24	1.8	0.4	100.00%	0.0		
Pediatrics	55,945	51,312.0	78,323	(27,011)	49,516	49,516	55,357	0.89	9.2	8.3	6.49%	7.7		
OB/Gyn	42,263	66,064.0	59,168	6,896	55,027	61,922	42,097	1.47	8.5	12.6	0.96%	12.4		
Emergency Medicine	12,931	31,328.0	18,103	13,225	16,836	30,061	9,309	3.23	1.8	5.7	0.00%	5.7		
Other Misc.***	7,458	20,114.0	7,458	12,656	7,196	19,853	7,500	2.65	1.8	4.6	15.57%	3.9		
Radiology	96,148	191,489.0	134,607	56,882	125,184	182,067	96,148	1.89	7.5	14.2	0.14%	14.1		
Psychiatry	30,687	55,996.0	30,687	25,309	29,613	54,922	30,421	1.81	8.7	15.7	19.92%	12.6		
Anesthesiology	11,196	17,892.0	11,196	6,696	10,804	17,500	11,196	1.56	4.9	7.6	26.54%	5.6		
Pathology	172,312	326,330.0	241,237	85,092.8	224,351	309,443	172,312	1.80	5.4	9.7	0.01%	9.7		

* Other internal medicine includes allergy, allergy and immunotherapy, diabetes, diagnostic laboratory immunology, endocrinology, gastroenterology, geriatrics, hematology, immunology, infectious diseases, nephrology, nutrition, medical oncology, pulmonary disease, and rheumatology.

** - Other surgery includes neurosurgery, plastic surgery, colon and rectal surgery, and thoracic surgery.

***- Other misc. includes aerospace medicine, neurology, nuclear medicine, occupational medicine, physical medicine and rehabilitation, general preventive medicine, public health, dermatology, other specialty, and unspecified.

Model
for
Active Duty Dependents Only

Product Line	M&R Locally Managed Expected Utilization	[illegible] Catchment Area Utilization [illegible]	Expected Utilization [illegible] (N/A)	[illegible] Mission Related Utilization	Non-Mission [illegible] Specialties)	[illegible] Adjusted [illegible] Utilization (Optimized)	M&R Optimally Managed Expected Utilization	[illegible] Factor (a/b)	Recommended [illegible] Provider Staffing Level ([illegible] Adjusted)	Utilization Adjusted Provider Staffing [illegible]	Percentage CHAMPUS Utilization [illegible]	Military Provider Staffing [illegible] CHAMPUS Staffing)	Military Unique Factor [illegible]	[illegible]
General Practice/Family Practice	119,042	260,111.0	166,659	93,452	154,993	248,445	119,320	2.1	21.2	44.1	0.0	42.2	1.10	
Internal Medicine	21,257	3,976.0	21,257	(17,281)	3,837	3,837	21,297	0.2	4.4	0.8	0.1	0.7		
Cardiovascular Diseases	3,612	512.0	3,612	(3,100)	494	494	3,537	0.1	1.0	0.1	0.9	0.0		
Other Internal Medicine*	49,570	13,644.0	49,570	(35,926)	13,166	13,166	49,651	0.3	11.3	3.0	0.1	2.8		
General Surgery	11,387	5,165.0	11,387	(6,222)	4,984	4,984	11,516	0.4	2.8	1.2	0.0	1.2		
Otolaryngology	15,738	19,858.0	15,738	4,120	14,636	18,756	16,166	1.2	2.9	3.3	0.0	3.3		
Orthopedic Surgery	14,447	14,674.0	14,447	227	13,942	14,168	13,990	1.0	3.4	3.5	0.1	3.1		
Ophthalmology	4,352	15,391.0	6,093	9,298	5,880	15,178	4,380	3.5	0.8	2.8	0.0	2.6		
Urological Surgery	4,588	2,028.0	4,588	(2,560)	1,957	1,957	4,610	0.4	1.1	0.5	0.1	0.4		
Other Surgery**	2,771	523.0	2,771	(2,248)	505	505	2,786	0.2	1.3	0.2	1.0	0.0		
Pediatrics	42,291	49,852.0	59,207	(9,355)	48,107	48,107	42,422	1.1	7.0	8.0	0.1	7.4		
OB/Gyn	33,747	59,666.0	47,246	12,420	43,939	56,359	34,076	1.7	8.1	13.3	0.0	13.2		
Emergency Medicine	9,979	25,567.0	13,971	11,596	12,993	24,589	7,250	3.4	1.4	4.6	0.0	4.6		
Other Misc.***	4,200	13,257.0	4,200	9,057	4,053	13,110	4,224	3.1	1.0	3.2	0.1	2.9		
Radiology	80,485	164,460.0	112,679	51,781	104,792	156,572	80,485	1.9	5.9	11.6	0.0	11.5		
Psychiatry	23,564	49,448.0	23,564	25,884	22,740	48,623	23,365	2.1	6.7	13.9	0.2	11.4		
Anesthesiology	9,557	14,920.0	9,557	5,364	9,223	14,587	9,819	1.5	4.3	6.4	0.2	5.1		
Pathology	127,136	301,062.0	177,990	123,072.0	165,531	288,603	127,136	2.3	4.0	9.1	0.0	9.1		

* - Other internal medicine includes allergy, allergy and immunotherapy, diabetes, diagnostic laboratory immunology, endocrinology, gastroenterology, geriatrics, hematology, immunology, infectious diseases, nephrology, nutrition, medical oncology, pulmonary disease, and rheumatology.

** - Other surgery includes neurosurgery, plastic surgery, colon and rectal surgery, and thoracic surgery.

***- Other misc. includes aerospace medicine, neurology, nuclear medicine, occupational medicine, physical medicine and rehabilitation, general preventive medicine, public health, dermatology, other specialty, and unspecified.

Model
for
Active Duty Only

Product line	[illegible] M&R Loosely Managed Expected Utilization	Fort Campbell Catchment Area Utilization [illegible]	Expected Util w/Fee Care (italics indicates N/A)	[illegible] Mission Related Utilization	Non-[illegible] Mission Util with DM [illegible] 1993 DRG/1965 for specialties)	[illegible] Total Adjusted [illegible] Utilization (Optimized)	[illegible] M&R Optimally Managed Expected Utilization	[illegible] Factor (g/b)	Recommended Provider Staffing Level (Non-Adjusted)	Utilization Adjusted Provider Staffing Level	[illegible] Percentage CHAMPUS Utilization [illegible]	Military Provider Staffing (Provider Staffing [illegible] CHAMPUS Staffing)	[illegible] Military Unique Factor [illegible]	[illegible]
General Practice/Family Practice	30,643	143,614.0	42,901	100,713	39,898	140,611	30,646	4.6	5.8	26.5	0.00%	26.5	1.10	
Internal Medicine	5,531	2,950.0	5,531	(2,581)	2,847	2,847	5,511	0.5	1.2	0.6	0.00%	0.6		
Cardiovascular Diseases	1,657	29.0	1,657	(1,628)	28	28	1,690	0.0	0.4	0.0	0.00%	0.0		
Other Internal Medicine*	12,515	3,798.0	12,515	(8,717)	3,665	3,665	12,454	0.3	3.0	0.9	0.00%	0.9		
General Surgery	2,577	2,506.0	2,577	(71)	2,418	2,418	3,320	0.7	0.9	0.6	0.00%	0.6		
Otolaryngology	4,087	14,474.0	4,087	10,387	3,801	14,188	4,113	3.4	0.8	2.7	0.00%	2.7		
Orthopedic Surgery	3,842	10,772.0	3,842	6,930	3,708	10,638	3,909	2.7	1.1	2.9	0.00%	2.9		
Ophthalmology	1,683	8,523.0	2,356	6,167	2,273	8,441	1,692	5.0	0.3	1.5	0.00%	1.5		
Urological Surgery	1,269	1,146.0	1,269	(123)	1,106	1,106	1,271	0.9	0.3	0.3	0.00%	0.3		
Other Surgery**	786	-	786	(786)	-	-	792	0.0	0.4	0.0	0.00%	0.0		
Pediatrics														
OB/Gyn	8,003	14,390.0	11,204	3,186	10,420	13,606	8,131	1.7	1.4	2.4	0.00%	2.4		
Emergency Medicine	3,853	7,505.0	5,395	2,110	5,017	7,127	2,738	2.6	0.5	1.3	0.00%	1.3		
Other Misc ***	2,317	8,274.0	2,317	5,957	2,154	8,112	2,307	3.5	0.5	1.8	0.00%	1.8		
Radiology	17,124	76,795.0	23,973	52,822	22,295	75,117	17,124	4.4	1.4	6.1	0.00%	6.1		
Psychiatry	7,972	24,824.0	7,972	16,852	7,693	24,545	7,972	3.1	2.3	7.0	0.00%	7.0		
Anesthesiology	2,209	5,278.0	2,209	3,069	2,132	5,200	2,209	2.4	1.0	2.4	0.00%	2.4		
Pathology	32,142	173,792.0	44,998	128,793.5	41,849	170,642	32,142	5.3	1.0	5.4	0.00%	5.4		

* - Other internal medicine includes allergy, allergy and immunotherapy, diabetes, diagnostic laboratory immunology, endocrinology, gastroenterology, geriatrics, hematology, immunology, infectious diseases, nephrology, nutrition, medical oncology, pulmonary disease, and rheumatology.

** - Other surgery includes neurosurgery, plastic surgery, colon and rectal surgery, and thoracic surgery.

***- Other misc. includes aerospace medicine, neurology, nuclear medicine, occupational medicine, physical medicine and rehabilitation, general preventive medicine, public health, dermatology, other specialty, and unspecified

Optimal Mix of Military and Civilian Providers
for
All Beneficiaries

OPTIMAL MIX OF MILITARY AND CIVILIAN PROVIDERS

Product Line	FTE	PROEIS Providers	Civilian Providers	Total Providers
General Practice/Family Practice	46.3	15.0	32.6	47.6
Internal Medicine	3.9	4.0	0.2	4.2
Cardiovascular Diseases	0.0	0.0	0.0	0.0
Other Internal Medicine	4.3	0.0	4.3	4.3
General Surgery	1.9	1.9	0.0	1.9
Otolaryngology	3.6	0.0	3.6	3.6
Orthopedic Surgery	3.6	3.0	0.9	3.9
Ophthalmology	3.3	0.0	3.3	3.3
Urological Surgery	0.9	1.0	0.0	1.0
Other Surgery	0.0	0.0	0.0	0.0
Pediatrics	7.7	0.0	7.7	7.7
OB/Gyn	12.4	4.0	8.8	12.8
Emergency Medicine	5.7	3.0	2.9	5.9
Other Misc.	3.9	0.0	3.9	3.9
Radiology	14.1	0.0	14.1	14.1
Psychiatry	12.6	3.0	9.8	12.8
Anesthesiology	5.6	5.6	0.0	5.6
Pathology	9.7	0.0	9.7	9.7
	139.5	40.5	101.9	142.4

Optimal Use of Physician Extenders
for
All Beneficiaries

OPTIMAL USE OF PHYSICIAN EXTENDERS

Product Line	FTE	MD	PE	Total Providers
General Practice/Family Practice	47.6	17.6	35.3	52.9
Internal Medicine	4.2	1.6	3.1	4.7
Cardiovascular Diseases	0.0	0.0	0.0	na
Other Internal Medicine	4.3	1.6	3.2	4.8
General Surgery	1.9	1.9	0.0	1.9
Otolaryngology	3.6	3.6	0.0	3.6
Orthopedic Surgery	3.9	3.9	0.0	3.9
Ophthalmology	3.3	3.3	0.0	3.3
Urological Surgery	1.0	1.0	0.0	1.0
Other Surgery	0.0	0.0	0.0	0.0
Pediatrics	7.7	2.9	5.7	8.6
OB/Gyn	12.8	4.7	9.5	14.2
Emergency Medicine	5.9	2.2	4.4	6.6
Other Misc.	3.9	1.4	2.9	4.3
Radiology	14.1	14.1	0.0	14.1
Psychiatry	12.8	4.8	9.5	14.3
Anesthesiology	5.6	2.1	4.1	6.2
Pathology	9.7	9.7	0.0	9.7
Total	142.4	76.4	77.7	154.2
		29.0	58.0	

Comparison of Current and Recommended Product Line Staffing
for
All Beneficiaries

Productivity	Applied best practice ratio
Primary Care (Pediatrics and Family Practice)	
Providers	46	61.5
RNs	7	27.1
LPNs/ NAs	70	54.1
Medical Receptionists/Secretary	27	62.1
Total	150	204.8
Internal Medicine		
Providers	9	4.7
RNs	2	2.1
LPNs/ NAs	10	4.1
Medical Receptionists/Secretary	4	4.7
Total	25	15.7
Cardiovascular Diseases		
N/A		
Other Internal Medicine		
Providers	4	4.8
RNs	0	2.1
LPNs/ NAs	10	4.2
Medical Receptionists/Secretary	4	4.8
Total	18	16.0
General Surgery		
Providers	4	1.9
RNs	0	0.8
LPNs/ NAs	5	1.7
Medical Receptionists/Secretary	1	1.9
Total	10	6.3
Otolaryngology		
Providers	4	3.6
RNs	0	1.6
LPNs/ NAs	6	3.2
Medical Receptionists/Secretary	1	3.6
	11	11.9
Orthopedic Surgery		
Providers	7	3.9
RNs	0	1.7
LPNs/ NAs	2	3.4
Medical Receptionists/Secretary	3	3.9
Total	12	13.0

Comparison of Current and Recommended Product Line Staffing
for
All Beneficiaries

Product Line	As-Is	Applied best practice ratio
Ophthalmology		
Providers	5	3.3
RNs	0	1.5
LPNs/ NAs	5	2.9
Medical Receptionists/Secretary	2	3.3
Total	12	11.0
Urological Surgery		
Providers	2	0.9
RNs	0	0.4
LPNs/ NAs	3	0.8
Medical Receptionists/Secretary	1	0.9
Total	6	3.0
Other Surgery	0.0	
N/A		
OB/Gyn		
Providers	20	14.2
RNs	5	6.2
LPNs/ NAs	16	12.5
Medical Receptionists/Secretary	7	14.3
Total	48	47.3
Emergency Medicine		
Providers	17	6.6
RNs	9	2.9
LPNs/ NAs	22	5.8
Medical Receptionists/Secretary	10	6.7
Total	58	22.0
Other Misc.		
Providers	10	4.3
RNs	0	1.9
LPNs/ NAs	12	3.8
Medical Receptionists/Secretary	5	4.3
Total	27	14.3
Radiology		
Providers	6	14.1
Radiology Tech	36	30.3
Medical Receptionists/Secretary	10	14.3
Total	52	58.7

Comparison of Current and Recommended Product Line Staffing
for
All Beneficiaries

Product Line	As-Is	Applicable best practice ratio
Psychiatry		
Providers	34	14.3
RNs	0	6.3
LPNs/ NAs	5	12.6
Medical Receptionists/Secretary	9	6.3
Total	48	39.5
Anesthesiology		
Providers	16	6.2
LPN/NA	1	5.5
Medical Receptionists/Secretary	0	6.3
Total	17	17.9
Pathology		
Providers	14	9.7
Laboratory Technicians	33	48.0
Medical Receptionists/Secretary	4	9.8
Total	51	67.5
SubTotal	545	548.8
Inpatient Sub Total		72.8
Total		**621.6**

APPENDIX B
PHYSICIAN PRODUCTIVITY DATA

All Beneficiaries
Optimally Managed
Services per Hour

All Beneficiaries Optimally Managed

SERVICES DELIVERED PER HOUR BY SPECIALTY

SPECIALTIES	OFFICE VSTS/HR	HOSPITAL VSTS/HR	CLINIC/ER VSTS/HR	HOUSE CALL VSTS/HR	TOTAL VSTS/HR	SURGERY PROCEDURES/H	MISC CARE SVCS/HR	TOTAL SVCS/HR
GP/FP	3.020	2.537	2.056	1.850	2.831	0.500	0.000	2.506
GENERAL INTERNAL MEDICINE	2.312	2.319	1.960	1.764	2.252	0.667	0.000	1.987
CARDIOVASCULAR DISEASES	1.957	2.084	1.346	1.211	1.931	0.517	0.000	1.529
OTHER INTERNAL MEDICINE	2.112	2.256	1.561	1.405	2.113	0.955	0.000	1.708
GENERAL SURGERY	2.684	2.992	1.647	1.482	2.616	0.537	0.000	1.702
OTOLARYNGOLOGY	3.108	2.367	1.600	1.440	2.910	0.766	0.000	2.182
ORTHOPEDIC SURGERY	3.444	3.745	1.958	1.762	3.266	0.497	0.000	2.239
OPHTHALMOLOGY	3.212	1.400	2.071	1.864	3.104	0.881	0.000	2.611
UROLOGICAL SURGERY	2.886	2.597	1.652	1.487	2.736	0.646	0.000	1.943
OTHER SURGERY	2.172	3.000	1.347	1.212	2.212	0.391	0.000	1.415
PEDIATRICS	3.095	2.380	2.195	1.976	2.852	0.688	0.000	2.459
OB/GYN	2.771	2.740	1.774	1.597	2.678	0.477	0.000	1.900
EMERGENCY MEDICINE	2.933	4.000	2.587	2.328	2.626	0.000	0.000	2.419
OTHER MISC.	2.663	1.890	1.737	1.563	2.405	0.588	0.000	2.071
	SVC CAT 1 SVCS/HR	SVC CAT 2 SVCS/HR	SVC CAT 3 SVCS/HR	SVC CAT 4 SVCS/HR	SVC CAT 1-4 SVCS/HR	SVC CAT 5 SVCS/HR	SVC CAT 6 SVCS/HR	SVC CAT 1-6 SVCS/HR
RADIOLOGY	9.055	1.406	5.431	3.693	4.785	3.212	1.240	4.514
PSYCHIATRY	1.430	5.500	4.174	2.690	1.826	0.577	2.500	1.763
ANESTHESIOLOGY	0.556	1.061	2.954	2.400	1.110	5.000	4.333	1.137
PATHOLOGY	4.230	20.625	25.700	0.946	16.288	2.507	10.600	13.978

All Beneficiaries
Optimally Managed
Weeks and Hours Worked

All Beneficiaries Optimally Managed

WEEKS WORKED PER YEAR AND HOURS WORKED PER WEEK BY SPECIALTY

SPECIALTIES	WKS/YR	OFFICE HRS/WK	HOSPITAL HRS/WK	CLINIC/ER HRS/WK	HOUSE CALL HRS/WK	VISITS HRS/WK	SURGERY HRS/WK	MISC CARE HRS/WK	CARE HRS/WK	OTHER PROF HRS/WK	TOTAL HRS/WK
GP/FP	47.70	38.30	0.50	0.30	0.00	39.10	7.90	4.80	51.80	4.60	56.40
GENERAL INTERNAL MEDICINE	47.40	43.80	3.80	0.30	0.00	47.90	2.00	6.20	56.10	6.90	63.00
CARDIOVASCULAR DISEASES	47.40	42.10	7.80	0.80	0.00	50.70	2.00	5.80	58.50	5.60	64.10
OTHER INTERNAL MEDICINE	48.00	42.70	1.10	0.10	0.00	43.90	7.10	6.10	57.10	5.60	62.70
GENERAL SURGERY	47.80	26.70	1.40	0.20	0.00	28.30	25.40	3.80	57.50	6.80	64.30
OTOLARYNGOLOGY	47.90	34.20	0.40	0.10	0.00	34.70	12.60	3.60	50.90	5.20	56.10
ORTHOPEDIC SURGERY	46.40	20.50	1.70	0.40	0.00	22.60	27.90	3.50	54.00	5.90	59.90
OPHTHALMOLOGY	47.10	34.90	0.50	0.20	0.00	35.60	7.80	2.50	45.90	6.50	52.40
UROLOGICAL SURGERY	47.80	24.50	0.80	0.00	0.00	25.30	24.10	4.30	53.70	6.30	60.00
OTHER SURGERY	47.70	13.80	0.50	0.10	0.00	14.40	37.80	4.00	56.20	5.70	61.90
PEDIATRICS	47.60	40.70	3.00	0.70	0.00	44.40	1.30	5.90	51.60	6.80	58.40
OB/GYN	47.40	34.20	0.20	0.20	0.00	34.60	19.20	4.30	58.10	4.90	63.00
EMERGENCY MEDICINE	48.10	1.70	0.00	40.70	0.00	42.40	0.00	3.30	45.70	6.30	52.00
OTHER MISC.	47.20	34.00	5.50	0.00	0.00	39.50	0.60	5.00	45.10	7.80	52.90
	WKS/YR	SVC CAT 1 HRS/WK	SVC CAT 2 HRS/WK	SVC CAT 3 HRS/WK	SVC CAT 4 HRS/WK	SVC CAT 1-4 HRS/WK	SVC CAT 5 HRS/WK	SVC CAT 6 HRS/WK	SVC CAT 1-6 HRS/WK	OTHER PROF HRS/WK	TOTAL HRS/WK
RADIOLOGY	44.90	19.30	6.80	3.90	21.90	51.90	0.00	0.00	51.90	4.90	56.80
PSYCHIATRY	47.50	38.70	1.20	2.80	0.00	42.70	0.20	0.10	43.00	7.40	50.40
ANESTHESIOLOGY	45.10	29.80	14.20	6.50	0.00	50.50	0.00	0.00	50.50	6.90	57.40
PATHOLOGY	47.10	7.00	23.50	6.10	4.50	41.10	0.00	0.00	41.10	7.00	48.10

All Benficiaries
Loosely Managed
Services per Hour

All Beneficiaries Loosely Managed

SERVICES DELIVERED PER HOUR BY SPECIALTY

SPECIALTIES	OFFICE VSTS/HR	HOSPITAL VSTS/HR	CLINIC/ER VSTS/HR	HOUSE CALL VSTS/HR	TOTAL VSTS/HR	SURGERY PROCEDURES/HR	MISC CARE SVCS/HR	TOTAL SVCS/HR
GP/FP	3.020	2.537	2.056	1.850	2.831	0.500	0.000	2.506
GENERAL INTERNAL MEDICINE	2.312	2.319	1.960	1.764	2.252	0.667	0.000	1.987
CARDIOVASCULAR DISEASES	1.957	2.084	1.346	1.211	1.931	0.517	0.000	1.529
OTHER INTERNAL MEDICINE	2.112	2.256	1.561	1.405	2.113	0.955	0.000	1.708
GENERAL SURGERY	2.684	2.992	1.647	1.482	2.616	0.537	0.000	1.702
OTOLARYNGOLOGY	3.108	2.367	1.600	1.440	2.910	0.766	0.000	2.182
ORTHOPEDIC SURGERY	3.444	3.745	1.958	1.762	3.266	0.497	0.000	2.239
OPHTHALMOLOGY	3.212	1.400	2.071	1.864	3.104	0.881	0.000	2.611
UROLOGICAL SURGERY	2.886	2.597	1.652	1.487	2.736	0.646	0.000	1.943
OTHER SURGERY	2.172	3.000	1.347	1.212	2.212	0.391	0.000	1.415
PEDIATRICS	3.095	2.380	2.195	1.976	2.852	0.688	0.000	2.459
OB/GYN	2.771	2.740	1.774	1.597	2.678	0.477	0.000	1.900
EMERGENCY MEDICINE	2.933	4.000	2.587	2.328	2.626	0.000	0.000	2.419
OTHER MISC.	2.663	1.890	1.737	1.563	2.405	0.588	0.000	2.071
	SVC CAT 1 SVCS/HR	SVC CAT 2 SVCS/HR	SVC CAT 3 SVCS/HR	SVC CAT 4 SVCS/HR	SVC CAT 1-SVCS/HR	SVC CAT 5 SVCS/HR	SVC CAT 6 SVCS/HR	SVC CAT 1-6 SVCS/HR
RADIOLOGY	9.055	1.406	5.431	3.693	4.785	3.212	1.240	4.514
PSYCHIATRY	1.430	5.500	4.174	2.690	1.826	0.577	2.500	1.763
ANESTHESIOLOGY	0.556	1.061	2.954	2.400	1.110	5.000	4.333	1.137
PATHOLOGY	4.230	20.625	25.700	0.946	16.288	2.507	10.600	13.978

Active Duty Only
Optimally Managed
Weeks and Hours Worked

Active Duty Only Optimally Managed

WEEKS WORKED PER YEAR AND HOURS WORKED PER WEEK BY SPECIALTY

SPECIALTIES	WKS/YR	OFFICE HRS/WK	HOSPITAL HRS/WK	CLINIC/ER HRS/WK	HOUSE CALL HRS/WK	VISITS HRS/WK	SURGERY HRS/WK	ISC CAR HRS/WK	CARE HRS/WK	OTHER PROF HRS/WK	TOTAL HRS/WK
GP/FP	47.7	36.8	0.6	0.5	0.0	38.0	9.2	4.8	52.0	4.6	56.6
GENERAL INTERNAL MEDICINE	47.4	42.8	4.2	0.4	0.0	47.4	2.5	6.2	56.1	6.9	63.0
CARDIOVASCULAR DISEASES	47.4	40.8	8.4	1.2	0.0	50.4	2.4	5.8	58.6	5.6	64.2
OTHER INTERNAL MEDICINE	48.0	41.2	1.2	0.1	0.0	42.5	8.4	6.1	57.0	5.6	62.6
GENERAL SURGERY	47.8	24.2	1.4	0.3	0.0	25.9	27.8	3.8	57.5	6.8	64.3
OTOLARYNGOLOGY	47.9	32.0	0.4	0.2	0.0	32.6	14.7	3.6	50.9	5.2	56.1
ORTHOPEDIC SURGERY	46.4	18.3	1.6	0.6	0.0	20.5	30.0	3.5	54.0	5.9	59.9
OPHTHALMOLOGY	47.1	34.3	0.5	0.2	0.0	35.0	8.4	2.5	45.9	6.5	52.4
UROLOGICAL SURGERY	47.8	22.1	0.8	0.0	0.0	22.9	26.4	4.3	53.6	6.3	59.9
OTHER SURGERY	47.7	12.0	0.4	0.1	0.0	12.5	39.6	4.0	56.1	5.7	61.8
PEDIATRICS	47.6	39.8	3.3	1.0	0.0	44.1	1.6	5.9	51.6	6.8	58.4
OB/GYN	47.4	41.1	0.3	0.4	0.0	41.8	12.1	4.3	58.2	4.9	63.1
EMERGENCY MEDICINE	48.1	1.2	0.0	41.2	0.0	42.4	0.0	3.3	45.7	6.3	52.0
OTHER MISC.	47.2	35.5	4.2	0.0	0.0	39.7	0.5	5.0	45.2	7.8	53.0
	WKS/YR	SVC CAT 1 HRS/WK	SVC CAT 2 HRS/WK	SVC CAT 3 HRS/WK	SVC CAT 4 HRS/WK	SVC CAT 1-4 HRS/WK	SVC CAT 5 HRS/WK	SVC CAT 6 HRS/WK	SVC CAT 1- HRS/WK	OTHER PROF HRS/WK	TOTAL HRS/WK
RADIOLOGY	44.90	16.50	5.80	4.50	25.20	52.00	0.00	0.00	52.00	4.90	56.90
PSYCHIATRY	47.50	38.70	1.20	2.80	0.00	42.70	0.20	0.10	43.00	7.40	50.40
ANESTHESIOLOGY	45.10	29.80	14.20	6.50	0.00	50.50	0.00	0.00	50.50	6.90	57.40
PATHOLOGY	47.10	7.00	23.50	6.10	4.50	41.10	0.00	0.00	41.10	7.00	48.10

All Benficiaries
Loosely Managed
Services per Hour

All Beneficiaries Loosely Managed

SERVICES DELIVERED PER HOUR BY SPECIALTY

SPECIALTIES	OFFICE VSTS/HR	HOSPITAL VSTS/HR	CLINIC/ER VSTS/HR	HOUSE CALL VSTS/HR	TOTAL VSTS/HR	SURGERY PROCEDURES/HR	MISC CARE SVCS/HR	TOTAL SVCS/HR
GP/FP	3.020	2.537	2.056	1.850	2.831	0.500	0.000	2.506
GENERAL INTERNAL MEDICINE	2.312	2.319	1.960	1.764	2.252	0.667	0.000	1.987
CARDIOVASCULAR DISEASES	1.957	2.084	1.346	1.211	1.931	0.517	0.000	1.529
OTHER INTERNAL MEDICINE	2.112	2.256	1.561	1.405	2.113	0.955	0.000	1.708
GENERAL SURGERY	2.684	2.992	1.647	1.482	2.616	0.537	0.000	1.702
OTOLARYNGOLOGY	3.108	2.367	1.600	1.440	2.910	0.766	0.000	2.182
ORTHOPEDIC SURGERY	3.444	3.745	1.958	1.762	3.266	0.497	0.000	2.239
OPHTHALMOLOGY	3.212	1.400	2.071	1.864	3.104	0.881	0.000	2.611
UROLOGICAL SURGERY	2.886	2.597	1.652	1.487	2.736	0.646	0.000	1.943
OTHER SURGERY	2.172	3.000	1.347	1.212	2.212	0.391	0.000	1.415
PEDIATRICS	3.095	2.380	2.195	1.976	2.852	0.688	0.000	2.459
OB/GYN	2.771	2.740	1.774	1.597	2.678	0.477	0.000	1.900
EMERGENCY MEDICINE	2.933	4.000	2.587	2.328	2.626	0.000	0.000	2.419
OTHER MISC.	2.663	1.890	1.737	1.563	2.405	0.588	0.000	2.071
	SVC CAT 1 SVCS/HR	SVC CAT 2 SVCS/HR	SVC CAT 3 SVCS/HR	SVC CAT 4 SVCS/HR	SVC CAT 1-SVCS/HR	SVC CAT 5 SVCS/HR	SVC CAT 6 SVCS/HR	SVC CAT 1-6 SVCS/HR
RADIOLOGY	9.055	1.406	5.431	3.693	4.785	3.212	1.240	4.514
PSYCHIATRY	1.430	5.500	4.174	2.690	1.826	0.577	2.500	1.763
ANESTHESIOLOGY	0.556	1.061	2.954	2.400	1.110	5.000	4.333	1.137
PATHOLOGY	4.230	20.625	25.700	0.946	16.288	2.507	10.600	13.978

All Benficiaries
Loosely Managed
Weeks and Hours Worked

All Beneficiaries Loosely Managed

WEEKS WORKED PER YEAR AND HOURS WORKED PER WEEK BY SPECIALTY

SPECIALTIES	WKS/YR	OFFICE HRS/WK	HOSPITAL HRS/WK	CLINIC/ER HRS/WK	HOUSE CALL HRS/WK	VISITS HRS/WK	SURGERY HRS/WK	MISC CARE HRS/WK	CARE HRS/WK	OTHER PROF HRS/WK	TOTAL HRS/WK
GP/FP	47.7	38.1	0.7	0.5	0.0	39.3	7.8	4.8	51.9	4.6	56.5
GENERAL INTERNAL MEDICINE	47.4	42.4	5.1	0.4	0.0	47.9	2.0	6.2	56.1	6.9	63.0
CARDIOVASCULAR DISEASES	47.4	39.6	10.1	1.1	0.0	50.8	1.9	5.8	58.5	5.6	64.1
OTHER INTERNAL MEDICINE	48.0	42.4	1.5	0.1	0.0	44.0	7.0	6.1	57.1	5.6	62.7
GENERAL SURGERY	47.8	26.5	1.9	0.3	0.0	28.7	25.0	3.8	57.5	6.8	64.3
OTOLARYNGOLOGY	47.9	34.0	0.6	0.2	0.0	34.8	12.5	3.6	50.9	5.2	56.1
ORTHOPEDIC SURGERY	46.4	20.3	2.2	0.6	0.0	23.1	27.4	3.5	54.0	5.9	59.9
OPHTHALMOLOGY	47.1	34.7	0.6	0.2	0.0	35.5	7.8	2.5	45.8	6.5	52.3
UROLOGICAL SURGERY	47.8	24.4	1.1	0.0	0.0	25.5	23.9	4.3	53.7	6.3	60.0
OTHER SURGERY	47.7	13.8	0.7	0.1	0.0	14.6	37.5	4.0	56.1	5.7	61.8
PEDIATRICS	47.6	39.5	4.0	0.9	0.0	44.4	1.3	5.9	51.6	6.8	58.4
OB/GYN	47.4	34.4	0.2	0.3	0.0	34.9	18.9	4.3	58.1	4.9	63.0
EMERGENCY MEDICINE	48.1	1.2	0.0	41.2	0.0	42.4	0.0	3.3	45.7	6.3	52.0
OTHER MISC.	47.2	32.4	7.2	0.0	0.0	39.6	0.6	5.0	45.2	7.8	53.0
	WKS/YR	SVC CAT 1 HRS/WK	SVC CAT 2 HRS/WK	SVC CAT 3 HRS/WK	SVC CAT 4 HRS/WK	SVC CAT 1-4 HRS/WK	SVC CAT 5 HRS/WK	SVC CAT 6 HRS/WK	C CAT 1 HRS/WK	OTHER PROF HRS/WK	TOTAL HRS/WK
RADIOLOGY	44.90	19.30	6.80	3.90	21.90	51.90	0.00	0.00	51.90	4.90	56.80
PSYCHIATRY	47.50	38.70	1.20	2.80	0.00	42.70	0.30	0.10	43.00	7.40	50.40
ANESTHESIOLOGY	45.10	29.80	14.20	6.50	0.00	50.50	0.00	0.00	50.50	6.90	57.40
PATHOLOGY	47.10	7.00	23.50	6.10	4.50	41.10	0.00	0.00	41.10	7.00	48.10

Active Duty Dependents
Optimally Managed
Services per Hour

Active Duty & Dependents Optimally Managed

SERVICES DELIVERED PER HOUR BY SPECIALTY

SPECIALTIES	OFFICE VSTS/HR	HOSPITAL VSTS/HR	CLINIC/ER VSTS/HR	HOUSE CALL VSTS/HR	TOTAL VSTS/HR	SURGERY PROCEDURES/HR	MISC CAR SVCS/HR	TOTAL SVCS/HR
GP/FP	3.020	2.537	2.056	1.850	2.831	0.500	0.000	2.506
GENERAL INTERNAL MEDICINE	2.312	2.319	1.960	1.764	2.252	0.667	0.000	1.987
CARDIOVASCULAR DISEASES	1.957	2.084	1.346	1.211	1.931	0.517	0.000	1.529
OTHER INTERNAL MEDICINE	2.112	2.256	1.561	1.405	2.113	0.955	0.000	1.708
GENERAL SURGERY	2.684	2.992	1.647	1.482	2.616	0.537	0.000	1.702
OTOLARYNGOLOGY	3.108	2.367	1.600	1.440	2.910	0.766	0.000	2.182
ORTHOPEDIC SURGERY	3.444	3.745	1.958	1.762	3.266	0.497	0.000	2.239
OPHTHALMOLOGY	3.212	1.400	2.071	1.864	3.104	0.881	0.000	2.611
UROLOGICAL SURGERY	2.886	2.597	1.652	1.487	2.736	0.646	0.000	1.943
OTHER SURGERY	2.172	3.000	1.347	1.212	2.212	0.391	0.000	1.415
PEDIATRICS	3.095	2.380	2.195	1.976	2.852	0.688	0.000	2.459
OB/GYN	2.771	2.740	1.774	1.597	2.678	0.477	0.000	1.900
EMERGENCY MEDICINE	2.933	4.000	2.587	2.328	2.626	0.000	0.000	2.419
OTHER MISC.	2.663	1.890	1.737	1.563	2.405	0.588	0.000	2.071
	SVC CAT 1 SVCS/HR	SVC CAT 2 SVCS/HR	SVC CAT 3 SVCS/HR	SVC CAT 4 SVCS/HR	SVC CAT 1-4 SVCS/HR	SVC CAT 5 SVCS/HR	SVC CAT 6 SVCS/HR	SVC CAT 1-6 SVCS/HR
RADIOLOGY	9.055	1.406	5.431	3.693	4.785	3.212	1.240	4.514
PSYCHIATRY	1.430	5.500	4.174	2.690	1.826	0.577	2.500	1.763
ANESTHESIOLOGY	0.556	1.061	2.954	2.400	1.110	5.000	4.333	1.137
PATHOLOGY	4.230	20.625	25.700	0.946	16.288	2.507	10.600	13.978

Active Duty and
Dependents
Optimally Managed
Weeks and Hours Worked

Active Duty & Dependents Optimally Managed

WEEKS WORKED PER YEAR AND HOURS WORKED PER WEEK BY SPECIALTY

SPECIALTIES	WKS/YR	OFFICE HRS/WK	HOSPITAL HRS/WK	CLINIC/ER HRS/WK	HOUSE CALL HRS/WK	VISITS HRS/WK	SURGERY HRS/WK	MISC CARE HRS/WK	CARE HRS/WK	OTHER PROF HRS/WK	TOTAL HRS/WK
GP/FP	47.7	39.1	0.5	0.3	0.0	39.9	7.2	4.8	51.9	4.6	56.5
GENERAL INTERNAL MEDICINE	47.4	44.2	3.6	0.3	0.0	48.1	1.9	6.2	56.2	6.9	63.1
CARDIOVASCULAR DISEASES	47.4	37.1	11.4	1.3	0.0	49.8	2.9	5.8	58.5	5.6	64.1
OTHER INTERNAL MEDICINE	48.0	43.4	1.0	0.1	0.0	44.5	6.4	6.1	57.0	5.6	62.6
GENERAL SURGERY	47.8	27.1	1.4	0.2	0.0	28.7	24.9	3.8	57.4	6.8	64.2
OTOLARYNGOLOGY	47.9	35.2	0.4	0.1	0.0	35.7	11.5	3.6	50.8	5.2	56.0
ORTHOPEDIC SURGERY	46.4	21.7	1.6	0.5	0.0	23.8	26.7	3.5	54.0	5.9	59.9
OPHTHALMOLOGY	47.1	33.8	0.6	0.2	0.0	34.6	8.8	2.5	45.9	6.5	52.4
UROLOGICAL SURGERY	47.8	25.7	0.8	0.0	0.0	26.5	22.8	4.3	53.6	6.3	59.9
OTHER SURGERY	47.7	14.8	0.5	0.1	0.0	15.4	36.7	4.0	56.1	5.7	61.8
PEDIATRICS	47.6	41.0	2.8	0.7	0.0	44.5	1.2	5.9	51.6	6.8	58.4
OB/GYN	47.4	27.8	0.1	0.2	0.0	28.1	25.7	4.3	58.1	4.9	63.0
EMERGENCY MEDICINE	48.1	1.6	0.0	40.7	0.0	42.3	0.0	3.3	45.6	6.3	51.9
OTHER MISC.	47.2	32.7	6.9	0.0	0.0	39.6	0.6	5.0	45.2	7.8	53.0
	WKS/YR	SVC CAT 1 HRS/WK	SVC CAT 2 HRS/WK	SVC CAT 3 HRS/WK	SVC CAT 4 HRS/WK	SVC CAT 1-HRS/WK	SVC CAT 5 HRS/WK	SVC CAT 6 HRS/WK	SVC CAT 1-6 HRS/WK	OTHER PROF HRS/WK	TOTAL HRS/WK
RADIOLOGY	44.90	23.00	8.10	3.10	17.70	51.90	0.00	0.00	51.90	4.90	56.80
PSYCHIATRY	47.50	38.70	1.20	2.80	0.00	42.70	0.20	0.10	43.00	7.40	50.40
ANESTHESIOLOGY	45.10	29.80	14.20	6.50	0.00	50.50	0.00	0.00	50.50	6.90	57.40
PATHOLOGY	47.10	7.00	23.50	6.10	4.50	41.10	0.00	0.00	41.10	7.00	48.10

Active Duty Dependents
Loosely Managed
Services per Hour

Active Duty & Dependents Loosely Managed

SERVICES DELIVERED PER HOUR BY SPECIALTY

SPECIALTIES	OFFICE VSTS/HR	HOSPITAL VSTS/HR	CLINIC/ER VSTS/HR	HOUSE CALL VSTS/HR	TOTAL VSTS/HR	SURGERY PROCEDURES/HR	MISC CARE SVCS/HR	TOTAL SVCS/HR
GP/FP	3.020	2.537	2.056	1.850	2.831	0.500	0.000	2.506
GENERAL INTERNAL MEDICINE	2.312	2.319	1.960	1.764	2.252	0.667	0.000	1.987
CARDIOVASCULAR DISEASES	1.957	2.084	1.346	1.211	1.931	0.517	0.000	1.529
OTHER INTERNAL MEDICINE	2.112	2.256	1.561	1.405	2.113	0.955	0.000	1.708
GENERAL SURGERY	2.684	2.992	1.647	1.482	2.616	0.537	0.000	1.702
OTOLARYNGOLOGY	3.108	2.367	1.600	1.440	2.910	0.766	0.000	2.182
ORTHOPEDIC SURGERY	3.444	3.745	1.958	1.762	3.266	0.497	0.000	2.239
OPHTHALMOLOGY	3.212	1.400	2.071	1.864	3.104	0.881	0.000	2.611
UROLOGICAL SURGERY	2.886	2.597	1.652	1.487	2.736	0.646	0.000	1.943
OTHER SURGERY	2.172	3.000	1.347	1.212	2.212	0.391	0.000	1.415
PEDIATRICS	3.095	2.380	2.195	1.976	2.852	0.688	0.000	2.459
OB/GYN	2.771	2.740	1.774	1.597	2.678	0.477	0.000	1.900
EMERGENCY MEDICINE	2.933	4.000	2.587	2.328	2.626	0.000	0.000	2.419
OTHER MISC.	2.663	1.890	1.737	1.563	2.405	0.588	0.000	2.071
	SVC CAT 1 SVCS/HR	SVC CAT 2 SVCS/HR	SVC CAT 3 SVCS/HR	SVC CAT 4 SVCS/HR	SVC CAT 1-SVCS/HR	SVC CAT 5 SVCS/HR	SVC CAT 6 SVCS/HR	SVC CAT 1-6 SVCS/HR
RADIOLOGY	9.055	1.406	5.431	3.693	4.785	3.212	1.240	4.514
PSYCHIATRY	1.430	5.500	4.174	2.690	1.826	0.577	2.500	1.763
ANESTHESIOLOGY	0.556	1.061	2.954	2.400	1.110	5.000	4.333	1.137
PATHOLOGY	4.230	20.625	25.700	0.946	16.288	2.507	10.600	13.978

Active Duty and
Dependents
Loosely Managed
Weeks and Hours Worked

Active Duty & Dependents Loosley Managed

WEEKS WORKED PER YEAR AND HOURS WORKED PER WEEK BY SPECIALTY

SPECIALTIES	WKS/YR	OFFICE HRS/WK	HOSPITAL HRS/WK	CLINIC/ER HRS/WK	HOUSE CALL HRS/WK	VISITS HRS/WK	SURGERY HRS/WK	MISC CAR HRS/WK	CARE HRS/WK	OTHER PRO HRS/WK	TOTAL HRS/WK
GP/FP	47.7	38.8	0.7	0.5	0.0	40.0	7.1	4.8	51.9	4.6	56.5
GENERAL INTERNAL MEDICINE	47.4	43.0	4.7	0.4	0.0	48.1	1.8	6.2	56.1	6.9	63.0
CARDIOVASCULAR DISEASES	47.4	34.1	14.2	1.7	0.0	50.0	2.7	5.8	58.5	5.6	64.1
OTHER INTERNAL MEDICINE	48.0	43.1	1.4	0.1	0.0	44.6	6.3	6.1	57.0	5.6	62.6
GENERAL SURGERY	47.8	26.8	1.9	0.3	0.0	29.0	24.6	3.8	57.4	6.8	64.2
OTOLARYNGOLOGY	47.9	34.9	0.5	0.2	0.0	35.6	11.7	3.6	50.9	5.2	56.1
ORTHOPEDIC SURGERY	46.4	21.8	2.1	0.7	0.0	24.6	25.9	3.5	54.0	5.9	59.9
OPHTHALMOLOGY	47.1	33.6	0.7	0.3	0.0	34.6	8.7	2.5	45.8	6.5	52.3
UROLOGICAL SURGERY	47.8	25.6	1.0	0.0	0.0	26.6	22.6	4.3	53.5	6.3	59.8
OTHER SURGERY	47.7	14.7	0.6	0.1	0.0	15.4	36.6	4.0	56.0	5.7	61.7
PEDIATRICS	47.6	39.9	3.7	0.9	0.0	44.5	1.2	5.9	51.6	6.8	58.4
OB/GYN	47.4	28.0	0.2	0.3	0.0	28.5	25.4	4.3	58.2	4.9	63.1
EMERGENCY MEDICINE	48.1	1.2	0.0	41.2	0.0	42.4	0.0	3.3	45.7	6.3	52.0
OTHER MISC.	47.2	30.8	8.8	0.0	0.0	39.6	0.6	5.0	45.2	7.8	53.0
	WKS/YR	SVC CAT 1 HRS/WK	SVC CAT 2 HRS/WK	SVC CAT 3 HRS/WK	SVC CAT 4 HRS/WK	SVC CAT 1-4 HRS/WK	SVC CAT 5 HRS/WK	SVC CAT 6 HRS/WK	SVC CAT 1- HRS/WK	OTHER PRO HRS/WK	TOTAL HRS/WK
RADIOLOGY	44.90	23.00	8.10	3.10	17.70	51.90	0.00	0.00	51.90	4.90	56.80
PSYCHIATRY	47.50	38.70	1.20	2.80	0.00	42.70	0.20	0.10	43.00	7.40	50.40
ANESTHESIOLOGY	45.10	29.80	14.20	6.50	0.00	50.50	0.00	0.00	50.50	6.90	57.40
PATHOLOGY	47.10	7.00	23.50	6.10	4.50	41.10	0.00	0.00	41.10	7.00	48.10

Active Duty Only
Optimally Managed
Services per Hour

Active Duty Only Optimally Managed

SERVICES DELIVERED PER HOUR BY SPECIALTY

SPECIALTIES	OFFICE VSTS/HR	HOSPITAL VSTS/HR	CLINIC/ER VSTS/HR	HOUSE CALL VSTS/HR	TOTAL VSTS/HR	SURGERY PROCEDURES/H	MISC CAT 1 SVCS/HR	TOTAL SVCS/HR
GP/FP	3.020	2.537	2.056	1.850	2.831	0.500	0.000	2.506
GENERAL INTERNAL MEDICINE	2.312	2.319	1.960	1.764	2.252	0.667	0.000	1.987
CARDIOVASCULAR DISEASES	1.957	2.084	1.346	1.211	1.931	0.517	0.000	1.529
OTHER INTERNAL MEDICINE	2.112	2.256	1.561	1.405	2.113	0.955	0.000	1.708
GENERAL SURGERY	2.684	2.992	1.647	1.482	2.616	0.537	0.000	1.702
OTOLARYNGOLOGY	3.108	2.367	1.600	1.440	2.910	0.766	0.000	2.182
ORTHOPEDIC SURGERY	3.444	3.745	1.958	1.762	3.266	0.497	0.000	2.239
OPHTHALMOLOGY	3.212	1.400	2.071	1.864	3.104	0.881	0.000	2.611
UROLOGICAL SURGERY	2.886	2.597	1.652	1.487	2.736	0.646	0.000	1.943
OTHER SURGERY	2.172	3.000	1.347	1.212	2.212	0.391	0.000	1.415
PEDIATRICS	3.095	2.380	2.195	1.976	2.852	0.688	0.000	2.459
OB/GYN	2.771	2.740	1.774	1.597	2.678	0.477	0.000	1.900
EMERGENCY MEDICINE	2.933	4.000	2.587	2.328	2.626	0.000	0.000	2.419
OTHER MISC.	2.663	1.890	1.737	1.563	2.405	0.588	0.000	2.071
	SVC CAT 1 SVCS/HR	SVC CAT 2 SVCS/HR	SVC CAT 3 SVCS/HR	SVC CAT 4 SVCS/HR	SVC CAT 1-4 SVCS/HR	SVC CAT 5 SVCS/HR	SVC CAT 6 SVCS/HR	SVC CAT 1-6 SVCS/HR
RADIOLOGY	9.055	1.406	5.431	3.693	4.785	3.212	1.240	4.514
PSYCHIATRY	1.430	5.500	4.174	2.690	1.826	0.577	2.500	1.763
ANESTHESIOLOGY	0.556	1.061	2.954	2.400	1.110	5.000	4.333	1.137
PATHOLOGY	4.230	20.625	25.700	0.946	16.288	2.507	10.600	13.978

Active Duty Only
Loosely Managed
Services per Hour

Active Duty Only Loosely Managed

SERVICES DELIVERED PER HOUR BY SPECIALTY

SPECIALTIES	OFFICE VSTS/HR	HOSPITAL VSTS/HR	CLINIC/ER VSTS/HR	HOUSE CALL VSTS/HR	TOTAL VSTS/HR	SURGERY PROCEDURES/H	MISC CARE SVCS/HR	TOTAL SVCS/HR
GP/FP	3.020	2.537	2.056	1.850	2.831	0.500	0.000	2.506
GENERAL INTERNAL MEDICINE	2.312	2.319	1.960	1.764	2.252	0.667	0.000	1.987
CARDIOVASCULAR DISEASES	1.957	2.084	1.346	1.211	1.931	0.517	0.000	1.529
OTHER INTERNAL MEDICINE	2.112	2.256	1.561	1.405	2.113	0.955	0.000	1.708
GENERAL SURGERY	2.684	2.992	1.647	1.482	2.616	0.537	0.000	1.702
OTOLARYNGOLOGY	3.108	2.367	1.600	1.440	2.910	0.766	0.000	2.182
ORTHOPEDIC SURGERY	3.444	3.745	1.958	1.762	3.266	0.497	0.000	2.239
OPHTHALMOLOGY	3.212	1.400	2.071	1.864	3.104	0.881	0.000	2.611
UROLOGICAL SURGERY	2.886	2.597	1.652	1.487	2.736	0.646	0.000	1.943
OTHER SURGERY	2.172	3.000	1.347	1.212	2.212	0.391	0.000	1.415
PEDIATRICS	3.095	2.380	2.195	1.976	2.852	0.688	0.000	2.459
OB/GYN	2.771	2.740	1.774	1.597	2.678	0.477	0.000	1.900
EMERGENCY MEDICINE	2.933	4.000	2.587	2.328	2.626	0.000	0.000	2.419
OTHER MISC.	2.663	1.890	1.737	1.563	2.405	0.588	0.000	2.071
	SVC CAT 1 SVCS/HR	SVC CAT 2 SVCS/HR	SVC CAT 3 SVCS/HR	SVC CAT 4 SVCS/HR	SVC CAT 1-4 SVCS/HR	SVC CAT 5 SVCS/HR	SVC CAT 6 SVCS/HR	SVC CAT 1-6 SVCS/HR
RADIOLOGY	9.055	1.406	5.431	3.693	4.785	3.212	1.240	4.514
PSYCHIATRY	1.430	5.500	4.174	2.690	1.826	0.577	2.500	1.763
ANESTHESIOLOGY	0.556	1.061	2.954	2.400	1.110	5.000	4.333	1.137
PATHOLOGY	4.230	20.625	25.700	0.946	16.288	2.507	10.600	13.978

Active Duty Only
Loosely Managed
Weeks and Hours Worked

Active Duty Only Loosely Managed

WEEKS WORKED PER YEAR AND HOURS WORKED PER WEEK BY SPECIALTY

SPECIALTIES	WKS/YR	OFFICE HRS/WK	HOSPITAL HRS/WK	CLINIC/ER HRS/WK	HOUSE CALL HRS/WK	VISITS HRS/WK	SURGERY HRS/WK	MISC CARE HRS/WK	CARE HRS/WK	OTHER PRO HRS/WK	TOTAL HRS/WK
GP/FP	47.7	36.5	0.8	0.7	0.1	38.1	9.0	4.8	51.9	4.6	56.5
GENERAL INTERNAL MEDICINE	47.4	41.3	5.6	0.6	0.0	47.5	2.5	6.2	56.2	6.9	63.1
CARDIOVASCULAR DISEASES	47.4	38.0	10.9	1.5	0.0	50.4	2.2	5.8	58.4	5.6	64.0
OTHER INTERNAL MEDICINE	48.0	40.9	1.6	0.1	0.0	42.6	8.2	6.1	56.9	5.6	62.5
GENERAL SURGERY	47.8	23.1	2.0	0.4	0.0	25.5	28.2	3.8	57.5	6.8	64.3
OTOLARYNGOLOGY	47.9	31.8	0.6	0.2	0.0	32.6	14.6	3.6	50.8	5.2	56.0
ORTHOPEDIC SURGERY	46.4	18.0	2.2	0.8	0.0	21.0	29.4	3.5	53.9	5.9	59.8
OPHTHALMOLOGY	47.1	34.1	0.6	0.3	0.0	35.0	8.4	2.5	45.9	6.5	52.4
UROLOGICAL SURGERY	47.8	22.1	1.1	0.0	0.0	23.2	26.2	4.3	53.7	6.3	60.0
OTHER SURGERY	47.7	11.9	0.7	0.2	0.0	12.8	39.4	4.0	56.2	5.7	61.9
PEDIATRICS	47.6	38.4	4.5	1.3	0.0	44.2	1.5	5.9	51.6	6.8	58.4
OB/GYN	47.4	41.2	0.4	0.5	0.0	42.1	11.7	4.3	58.1	4.9	63.0
EMERGENCY MEDICINE	48.1	0.8	0.0	41.6	0.0	42.4	0.0	3.3	45.7	6.3	52.0
OTHER MISC.	47.2	34.1	5.7	0.0	0.0	39.8	0.5	5.0	45.3	7.8	53.1

	WKS/YR	SVC CAT 1 HRS/WK	SVC CAT 2 HRS/WK	SVC CAT 3 HRS/WK	SVC CAT 4 HRS/WK	SVC CAT 1-4 HRS/WK	SVC CAT 5 HRS/WK	SVC CAT 6 HRS/WK	SVC CAT 1- HRS/WK	OTHER PRO HRS/WK	TOTAL HRS/WK
RADIOLOGY	44.90	16.50	5.80	4.50	25.20	52.00	0.00	0.00	52.00	4.90	56.90
PSYCHIATRY	47.50	38.70	1.20	2.80	0.00	42.70	0.20	0.10	43.00	7.40	50.40
ANESTHESIOLOGY	45.10	29.80	14.20	6.50	0.00	50.50	0.00	0.00	50.50	6.90	57.40
PATHOLOGY	47.10	7.00	23.50	6.10	4.50	41.10	0.00	0.00	41.10	7.00	48.10

APPENDIX C
DEMAND MANAGEMENT AND RAND REPORT "THE DEMAND FOR MILITARY HEALTH CARE"

Demand Management and the Rand Study

Demand Management

Research has shown that an effective demand management program can lead to a seven to seventeen percent decrease in medical services[7]. There are many definitions of demand management. Dr. Donald Vickery, Chairman and Medical Director of Health Decisions International, a firm that specializes in demand management services, is known as the pioneer of the concept. In 1996, Dr. Vickery received a trademark registration for the term. His definition is as follows:

> Demand management is the use of decision and self-management support systems to enable and encourage consumers to make appropriate use of medical services.
>
> *Donald Vickery, Chairman of Health Decisions International*

Other experts agree with this definition but feel it is slightly limited in scope. They feel it should also incorporate those concepts that extend beyond the consumer to those entities that exert pressure on the medical system on behalf of the patient. Potential examples include families, payers, employers, and communities.

Regardless of these slight differences, all experts agree that the primary goal of demand management is to ensure the right care, at the right time, and with the proper resources. They stress that demand management is not restricting access to care, but rather assuring proper use of health care services. Demand management programs aim at reducing health service expenditures by educating and empowering individuals to lead healthy lifestyles. Additionally, patients are encouraged to actively participate in their own health decisions.

Additionally, all concur that demand management hinges on the two biggest strategies associated with a demand management programs - appropriate access to health care and the use of health care resources and preventive services. One of the most effective ways to ensure appropriate access to care is to employ the use of telephone advice nurses. Hospitals and health plans are utilizing telephone advice and triage nurses to direct patients to an appropriate level of care before they enter an urgent care center or an emergency room. In addition to managing access to care, telephone advice and triage nurses can advance health-education efforts and improve patient and physician satisfaction. Several critics of demand management cite that use of strategies like telephone advice nurses decreases access to care. Dr. Vickery maintains, in response to this argument, that an effective use of advice or triage nurses, can free up the system so patients truly in need of urgent care can be seen. In essence, demand management

[7] Wilson, Jennifer. Will Demand Management Work? Reprinted at URL: http://www.acponline.org/journals/news/jul97/empower.html. Original source: American College of Physicians (ACP) Observer. July, 1997.

unclogs the system. Other ways of communicating with patients regarding appropriate medical care include health newsletters, brochures, videos, and books containing information in "lay-persons" terms.

The second strategy necessary to promote demand management is preventive care programs. The aim is to reduce the use of health care resources by educating and empowering individuals to practice health habits and to participate in the decisions regarding their own health care. Currently four of the nine standards used by the National Committee for Quality Assurance (NCQA) to measure quality in managed care programs focus on preventive services.[8] In addition, Timothy McAfee, MD, MPH, associate director of preventive care at Seattle's Group Health Cooperative of Puget Sound, states, "...preventive care is one of the top distinguishers of a patient's satisfaction with a physician."

Demand management has become such a well studied topic in the commercial health care world that several studies have been conducted and published in recent years.

- A study performed by the Wisconsin Education Association Group (WEA) demonstrated that every dollar spent by WEA on demand management programs translated into a savings of as much as $4.75 in costs. The savings were attributed to outpatient physician medical and surgical services as well as surgical facility and hospital outpatient department services.[9]
- Kaiser Permanente found that 40% of physician office visits were probably unnecessary. Individuals who were not in need of medical care but who were anxious about their health exercised their option to report to the Emergency Room or to the office of their primary care physician. These individuals were described in the study as the "worried well".[10]
- In 1993, the GAO found that as many as 43% of Emergency Room visits were unnecessary. There were other appropriate options available from which to choose.[11]
- Two health plans in Florida were denied NCQA accreditation because their members had no option for health advice in the evening other than the emergency room.[12]

[8] Kelly, Christine. Doing well by doing good; making prevention profitable. Reprinted at URL: http://www.acponline.org/journals/news/mar97/wellgood.html. Original source: American College of Physicians (ACP) Observer. March, 1997.

[9] "Demand Management Programs Can Yield Significant Savings, Study Finds (URL: http://www.hr2000.com/MERCER/NEWS/mpress.html)

[10] Lazarus, Ian CHE. "Medical Call Centers - An effective demand management strategy for providers and plan". URL: http://www.katsden.com/telenurse/callctr.html. Published in Managed Healthcare, October 1995. Reprinted at URL with permission of author.

[11] Ibid

[12] Ibid

Keeping the above in mind, the amount of demand management in place within a health care organization can be described along a continuum from a "loosely" managed organization to one that is "optimally" managed. A loosely managed organization has few demand management strategies in place and is without significant utilization management controls. This type of system has relatively open access to care and patients are seen when and where they (the patients) feel it is most convenient. Conversely, an optimally managed care system represents an organization where most unnecessary care has been eliminated, and required care is delivered in the most cost effective setting. Telephone advice nurses are maximally utilized as an initial point of entry into the system and preventive medicine initiatives are heavily promoted by the medical staff.

The Rand Report *"The Demand for Military Health Care"*

Section 733 of the National Defense Authorization Act for Fiscal Year 1992 and 1993 required the Secretary of Defense to conduct a comprehensive study of the MHS. This study was to include two major elements, one being, "... a comprehensive review of the existing ...civilian health care ... programs that are available as alternatives to... the existing military medical care system." This study was carried out by RAND at the direction of the Director of Program Evaluation and Analysis (PA&E)[13]. This RAND report was in support of the research conducted on the initial phase of this MHS study. The report was to include:

- An evaluation of beneficiaries' utilization of inpatient and outpatient services, identifying deviations from utilization patterns in civilian health plans
- A list of methods for providing care that are available as alternatives to the current military health care system
- The relationship between the demand for health care and the availability of military medical resources
- The likely response of beneficiaries to any planned changes in the cost they bear for care
- A comparison of the cost of providing care in military treatment facilities with those of indemnity plans or Health Maintenance Organizations (HMOs).

According to RAND, the MHS provides health care to roughly 9.2 million beneficiaries. They include active duty, their dependents, retirees and their dependents and survivors of military personnel[14]. The vast majority (92%) live in the United States and receive their care through local military hospitals and clinics. Those not being able to receive care from the direct care system use CHAMPUS, a health insurance plan.

Military hospitals provide care free of charge to all military beneficiaries as capacity permits, but the range of available services can vary widely. The largest military medical centers offer comprehensive health services due to their graduate medical education

[13] Hosek, S. 1995: 1
[14] Ibid: 3

program. Army Community Hospitals, on the other hand, offer basic acute care services and transfer their highly acute patients to comprehensive care facilities.

There have been a number of studies by different organizations that have examined the utilization of the military health system compared to commercial organizations. The overall findings of the 733 study are summarized below:

- Per capita, military beneficiaries use more health care than civilians. Much of this difference is explained by the overall generosity of the health benefit.
- Active duty beneficiaries and their dependents obtain a much higher portion of their health care from the direct care system than CHAMPUS.
- Other beneficiaries (retirees, etc.) obtain less than half of their care from the direct care system.
- MHS outpatient data sources generate information that is not reliable. Inpatient data is generally accurate in the aggregate, but not so geographically.

RAND reports that the research on effects of costs sharing on utilization suggests that one can expect a 30-40% increase in outpatient demand and 20-30% increase in inpatient demand due to the availability of free care. Survey data also shows that CHAMPUS eligible beneficiaries increase their utilization of the direct care system upon an increased access and decrease their use of CHAMPUS. Interestingly, the direct care increase is found to be considerably higher than the CHAMPUS decrease (70% higher for outpatient care and 150% higher for inpatient care).

Central findings and policy implications of the Rand Study include the following:

- The more people had to pay out of pocket, the fewer medical services they used.
- All types of service - physician visits, hospital admissions, prescriptions, dental visits, and mental health service use - fell with cost sharing.
- Health among the sick poor - approximately the most disadvantaged 6% of the population - was adversely affected with a cost-sharing plan.
- The reduced service use under the cost-sharing plans had little or no net adverse effect on health for the average person.

APPENDIX D
MILITARY UNIQUE FACTOR COMPONENTS

Medical Evaluation Boards

Medical Board Statistics from BACH PAD			
Service/FY96	**# of Evaluations**	**Time per Eval/Hrs**	**Total Hrs.**
ortho	507	1	507
medical	72	1	72
psych	14	1	14
podiatry	42	1	42
surgery	13	1	13
neurology	14	1	14
other	4	1	4
total FY96 hours			666
FY 97	**# of Evaluations**	**Time per Eval/Hrs**	**Total Hrs.**
ortho	333	2	666
medical	72	1	72
psych	19	1	19
podiatry	39	1	39
surgery	2	1	2
neurology	35	1	35
other	40	1	40
Total FY97 Hours			873
Total FTE'S			**0.433**

TRAINING REQUIREMENTS FROM 350-4 AND BACH MTEAM			ALL PROVIDERS - SOLDIERING		
Training	Who	Frequency	Duration	Attendees	Total Hours
Common Task Testing (CTT)	ALL SOLDIERS	annually	8	88	704
Hague-Geneva	ALL SOLDIERS	annually	1	88	88
Code of Conduct	ALL SOLDIERS	annually	1	88	88
Anti-Terrorism	ALL SOLDIERS	annually	1	88	88
PT Testing	ALL SOLDIERS	semi-annual	8	176	1408
Operational Security Training (OPSEC)	ALL SOLDIERS	initially and annually	1	88	88
Subversion and Esplonage Directed Against US Army	ALL SOLDIERS	every 2 years	1	44	44
Refresher Security Training	ALL SOLDIERS	annually	1	88	88
CBT Terrorist Training Plans	ALL SOLDIERS	annually	1	88	88
Officer Professional Development Program (NCODP)	OFFICERS	quarterly	4	88	352
Total Provider Hours					3,036
Provider FTEs					1.51

Additional Military Req	Who	Attendees	#training days	Total Hrs
NBC	both	2	30	240
Other Leadership (Military)	officer	2	14	112
CAS3	officer	1	63	504
Officer Advanced	officer	2	126	1008
Total Provider Hours				1,864
Provider FTEs				0.92

MED BOARDS FTE	FTEs
Medical Board FTEs From Previous Sheet	0.43

	FTEs
Clinic Chief Responsibility	
Administrative / Managerial Responsibilities	1.4

Backfill	Total Days	Total Hours
Backfill	400	3,200
Total FTEs		1.59

SOLDIERING FACTOR	
Total FTEs for Training	1.51
Total FTEs for Medical Boards	0.433
Total FTEs for Backfill	1.59
Total FTEs for Additional Military Requirements	0.92
Total FTEs for Administrative Responsibility	1.4
Total FTEs	5.85
Soldiering Factor	**0.066**

Provider

Combined Soldiering and PROFIS Factor

Training	Who	Frequency	Duration/Annually	Attendees	Total Hours
Orientation to Operational Unit	PROFIS	once w/.33 turnover/yr	4	14.33	57.33
Soldier Readiness Processing	PROFIS	annually	8	43	344
Weapons Training	PROFIS	every 2 years	8	21.5	172
Collective Training	PROFIS	annually	MTEAM data (1276 days)	43 docs/137 tot profis=32%	3,203.971
PROFIS TOTAL Hours					**3,777.304**
PROFIS FTE					**1.87**

Deployments - PROFIS	Days	Hours
61J	179	1432
60J	60	480
62B	45	360
61F	15	120
Total Hours		**2392**
Total FTEs		**1.19**

PROFIS Factor	
Training FTE	1.87
Deployment FTE	1.19
Total FTE	3.06
PROFIS Factor	**0.071**

MUF (provider)		
Soldiering Factor		0.066
PROFIS Factor	0.071	
Weighted PROFIS Factor		0.035
MUF		**0.101**

Support Staff
Soldiering Factor

TRAINING REQUIREMENTS FROM 350-4 AND BACH MTEAM			- SOLDIERING FACTOR		
Training	Who	Frequency	Duration/Hrs	Attendees	Total Hours
Common Task Testing (CTT)	all soldiers	annually	8	303	2424
Hague-Geneva	ALL SOLDIERS	annually	1	303	303
Code of Conduct	ALL SOLDIERS	annually	1	303	303
Anti-terrorism	ALL SOLDIERS	annually	1	303	303
PT Testing	ALL SOLDIERS	semi-annual	8	303	2424
Operational Security training and briefing (OPSEC)	ALL SOLDIERS	annually	1	303	303
Subversion and Espionage Directed Against US Army	ALL SOLDIERS	every 2 year	1	151	151
Refresher Security Training	ALL SOLDIERS	annually	1	303	303
CBT Terrorist Training Plans	ALL SOLDIERS	annually	1	303	303
Officer Professional Development Program (NCODP)	OFFICERS	quarterly	4	73	292
NCOPD	enlisted	quarterly	2	30.5	61
Total Hours for All Non-Providers					7170
Total Non-Provider FTEs					3.56
Additional Military Req	**Who**	**Attendees**	**#training days**	**total days**	**total hours**
NBC	Both	2	30	60	480
Other leadership (military)	Officer	2	14	28	224
CAS3	Officer	1	63	63	504
Air Assault School	Both	21	10	210	1680
Exp Field Medical Badge	Both	9	10	90	720
Duty Drivers	Enlisted	1	365	365	5840
CQ	Enlisted	1	365	365	5840
ANOC	Enlisted	1	44	44	352
BNOC	Enlisted	16	55.25	884	7072
PLDC	Enlisted	13	30	390	3120
AOD	Officer	1	365	365	2920
Total Non-Provider Hours					28752
Total Non-Provider FTES					14.26
SOLDIERING FACTOR					
Training FTE	3.56				
Other FTE	14.26				
Total FTE	17.82				
Soldiering Factor	17.82/303=	**0.06**			

Support Staff Combined Soldiering and PROFIS Factor

Training	Who	Frequency	Duration/Hours	Attendees	Total Hours
Orientation to operational uni	PROFIS	once w/.33 tur	4	31.33	125.33
Soldier readiness processing	PROFIS	annually	8	94	752
Weapons training	PROFIS	every 2 years	8	47	376
Collective Training	PROFIS	annually	MTEAM data	43 docs/135 tot profis	7004.03
			(1276 days)	=68% are support staff	
PROFIS Total Hours					**8,257.36**
PROFIS FTE					**4.10**

Deployments - PROFIS	Number	DAYS	Total Days	Total Hours
Bosnia	3	179	537	4296
Saudi Arabia	2	60	120	960
Honduras	2	50	100	800
Total Hours				**6,056**
Total FTE				**3**

PROFIS Factor		
Training FTE	4.1	
Deployment FTE	3	
Total FTE	7.1	
PROFIS Factor	7.1/94=	**0.08**

MUF		
Soldiering Factor		0.06
PROFIS Factor	0.08	
Weighted PROFIS Factor	.08*94/303=	0.02482
MUF		**0.08**

APPENDIX E
STAFFING CONSIDERATIONS USING PHYSICIAN ASSISTANTS AND NURSE PRACTITIONERS

Use of Physician Extenders in a Maximally Efficient Staffing Model

There are two categories of non-physician providers, referred to as physician extenders, whose scope of practice overlaps that of physicians. These include the following:

- Advanced Practice Nursing (Nurse Practitioners (NP))
- Physician Assistants (PA)

The role of the NP/PA is expected to grow dramatically for a number of reasons. First, the paucity of primary care physicians creates a considerable supply and demand problem, where the demand for primary care services is greater than the supply of primary care physicians. Second, current market forces view non-physician providers as extremely cost-effective. Health care systems that aggressively use physician extenders have found that a ratio of 2:1[15], using two physician extenders per primary care physician, is effective. Additionally, quality of care is equivalent to that of physician practice and patient satisfaction improves considerably with the use of physician extenders.

The trend toward educational requirements for NPs is moving toward Masters degree preparation and additional certification from the American Nurses Association. All must have appropriate state licensure. PAs have varying educational requirements, but the majority of PAs currently practicing have a Baccalaureate degree. The major difference between NP's and PAs was their legal and professional relationships with physicians. By law, PA's can practice only under the supervision of a physician. PAs function in concert with physicians most often playing supplementary or complementary roles. NPs, however are, separately licensed health care providers. They practice, in most clinical settings, with some form of professional cooperation with a physician (Pan, S. etal. 1997: 15). Table 1 below compares some of the important features of each professional.

Table 1
Features of PAs and NPs

Characteristic	Category	NPs	PAs
Practice Location	Metro	85.51%	62.1%
	Non-metro	14.51%	37.9%
Location in States with/without Prescription Authority	With	97.3%	75.2%
	Without	2.7%	24.8%
Average Number of Outpatient Visits per Week	Family	75	105
	Adult/Internal Medicine	56	90
	Pediatrics	65	134
	OB/GYN	67	71
Work Hours/Week	Mean	40.8	41.8

Source: Nurse Practitioner, January 199- (data obtained 1992 and 1993)

[15] Mark, d. etal. 1997: 1-7.

Nurse Practitioners

Nurse Practitioners were officially recognized in the 1960's. Specifically, the main areas of expertise were in the fields of pediatrics and family medicine. In the 1980's NPs expanded into adult health, geriatrics, occupational health, women's health and psychiatry. In 1994, of the 2.2 million RNs, 100,000 were either Certified Registered Nurse Anesthetists, Certified Nurse Midwives, Clinical Nurse Specialists, and NPs. 50% were NPs and in 1997, 91% of the NPs were employed in ambulatory practices (Mark, D. etal., 1997: 2 - 27).

The Primary Care Demonstration Project (PCDP) suggests examining three criteria when assessing the use of physician extenders. These include:

- Productivity
- Cost of Care
- Outcomes

Productivity

Pickwell states that NPs can deliver 80% of the services provided by primary care physicians and can perform them with comparable quality at a decreased cost (Pickwell, 1997: 1094). In addition, Schaffner cites that primary care physicians can delegate 75% of the adult and 90% of the pediatric care to NPs without adverse effects on quality (Schaffner, etal., 1995: 41). NPs average 19.4 minutes per direct encounter, as compared with 11 minutes for physicians.

Cost of Care

The cost of care can be measured in cost per visit and cost per year. The PCDP references studies suggesting cost of care on a per visit basis by a NP can be from 20 - 40% less as compared with a physician. Additionally, the overall cost of care on a yearly basis is 4 - 23% less than physician care (Mark D., etal. 1997: 2-32).

Outcomes

A study performed in 1995 by the American Nurses Association found that the quality of care delivered by NPs was equivalent or superior to that of physicians. Clients reported increased satisfaction with their care due to better interpersonal communication skills. In addition, the study found that the use of NPs greatly increased the access to care (Mark, D. etal., 1997: 2-36).

Physician Assistants

The first education program for PAs was initiated at Duke University in the 1960's. The DoD was also a major driver in the development of PAs. DoD initiated the use of PAs as an effort to remedy the physician shortage (Mark, D., etal. 1997: 2 - 42). There are 23,350 PAs in practice today with roughly 50% practicing in primary care areas. The remaining 50% practice emergency medicine, general surgery, internal medicine, and other surgical specialties (Mark, D., etal., 1997: 2 - 44).

Productivity

The mean number of outpatient visits per day seen by a PA is 21.3. A study performed at four AF bases found that a PA can be substituted for a physician 80-90% of the time, providing the clients' problems fall within the PAs areas of expertise (Mark, D., etal 1997: 2-60). PAs averaged 13 minutes per encounter compared to 11 minutes for a physician. Over a year, given an equivalent patient acuity, a PA workload is approximately 85% of a primary care physician.

Cost of Care:

Researchers have found that physicians and PAs order approximately the same level of X-Ray and laboratory procedures (Mark, D. etal., 1997: 2-61). The cost savings associated with the use of PAs is found through reduced salary levels.

Conclusions:

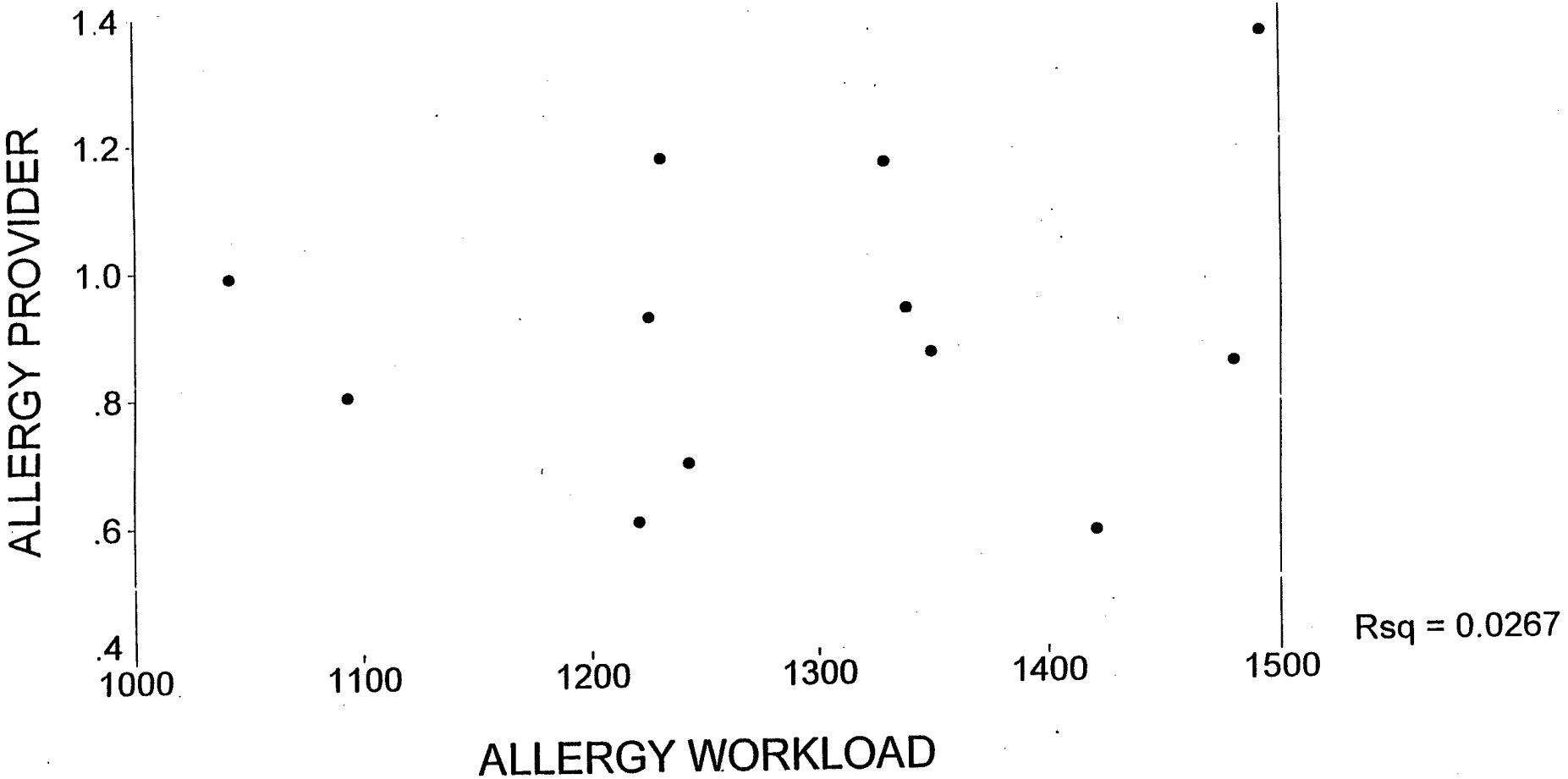
Primary care product line provider FTE requirements can be supplemented through the use of physician extenders employing a ratio of 2:1 (extender to physician) without affecting the quality of health care service. In addition, we must adjust the PE requirement for productivity. As a rule PE's are 85% as productive as physicians.

For example, the GP/FP product line requires 47.6 FTEs. Using the 2:1 ratio and adjusting for productivity, an optimal staff mix of physician extenders and physicians can be found using the following formula:

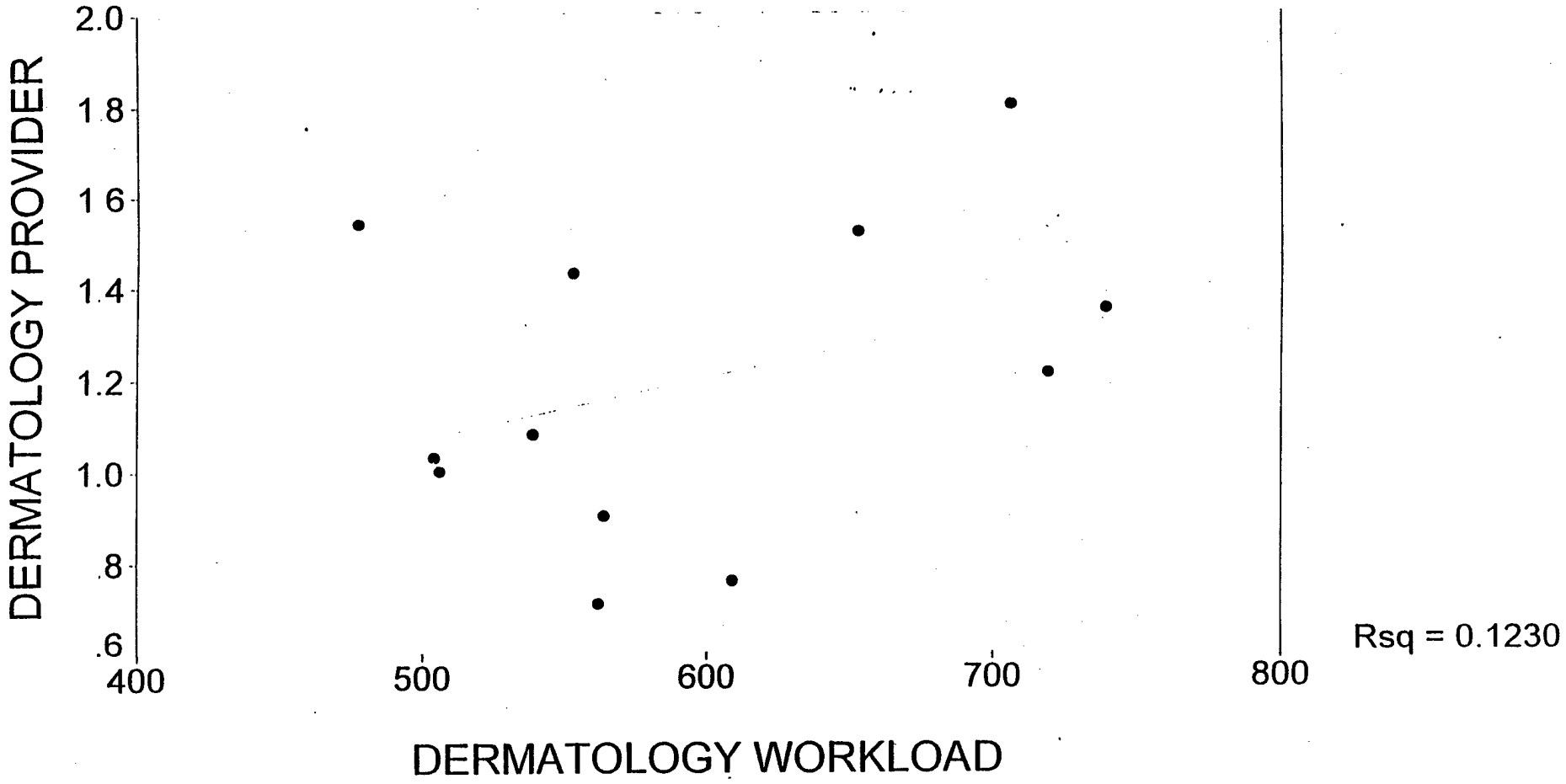
$$47.6 \text{ FTEs} = 0.85 \text{ PE} + \text{MD}$$
$$47.6 = 0.85(2X) + X$$
$$\text{where } X = \text{MD}$$
$$47.6 = 2.7X$$
$$17.6 = \text{MD}$$
$$35.3 = \text{PE}$$

Therefore, to optimally staff a 47.6 FTE requirement for FP/GP, one could use 17.6 physicians and 35.3 physician extenders while maintaining the productivity and high quality of care.

Fort Campbell
Allergy Regression



Fort Campbell
Dermatology Regression



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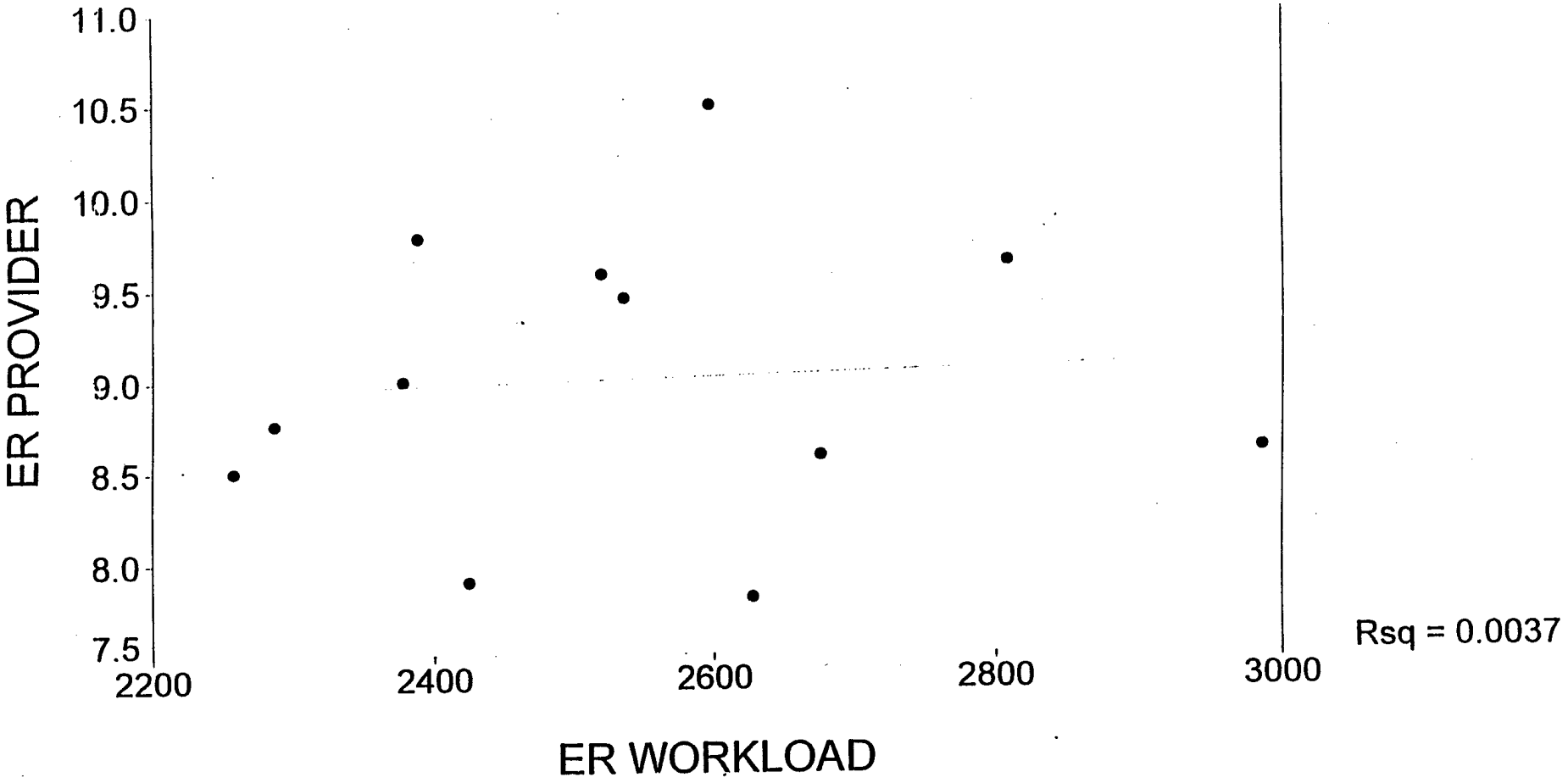
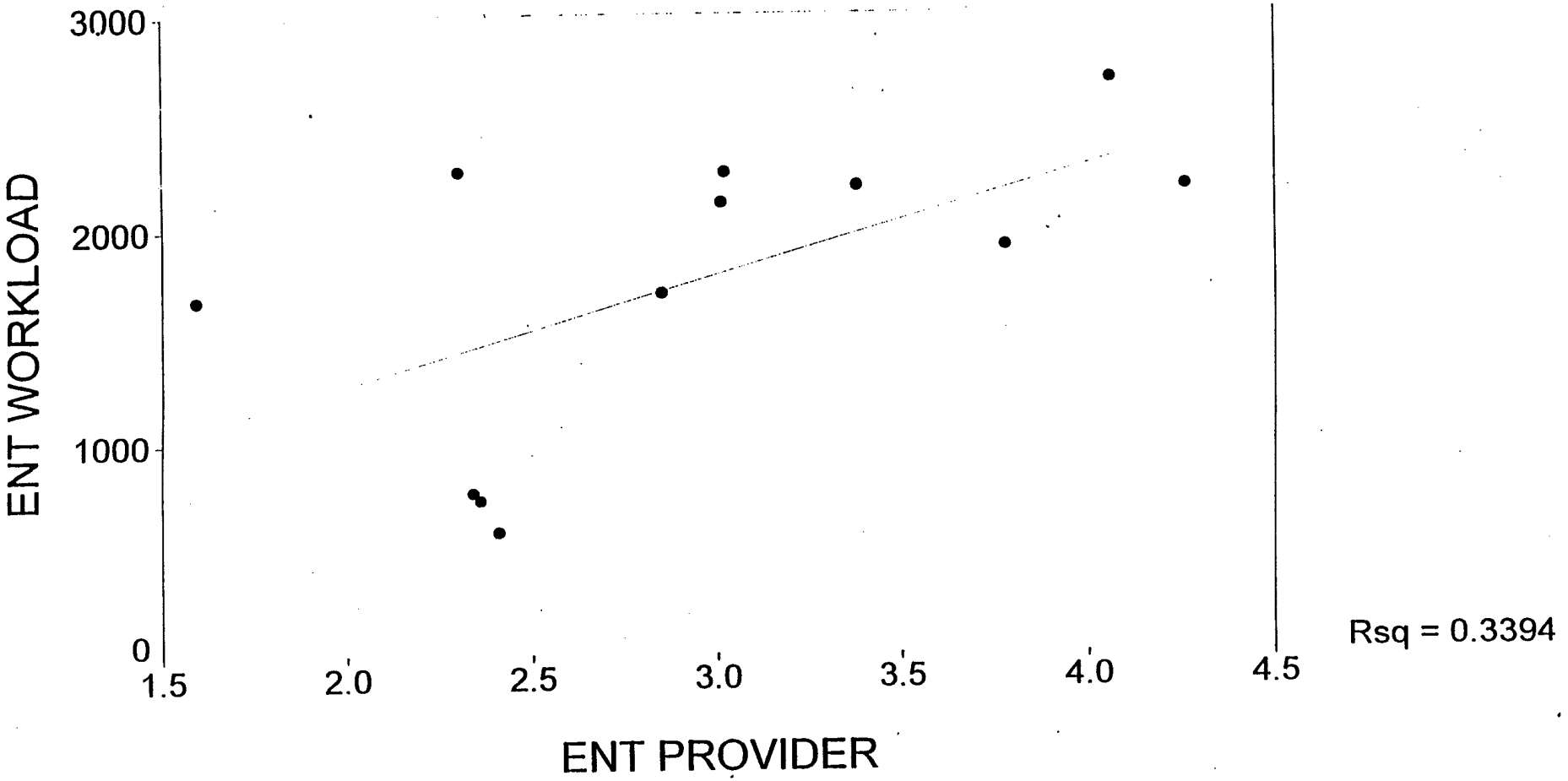
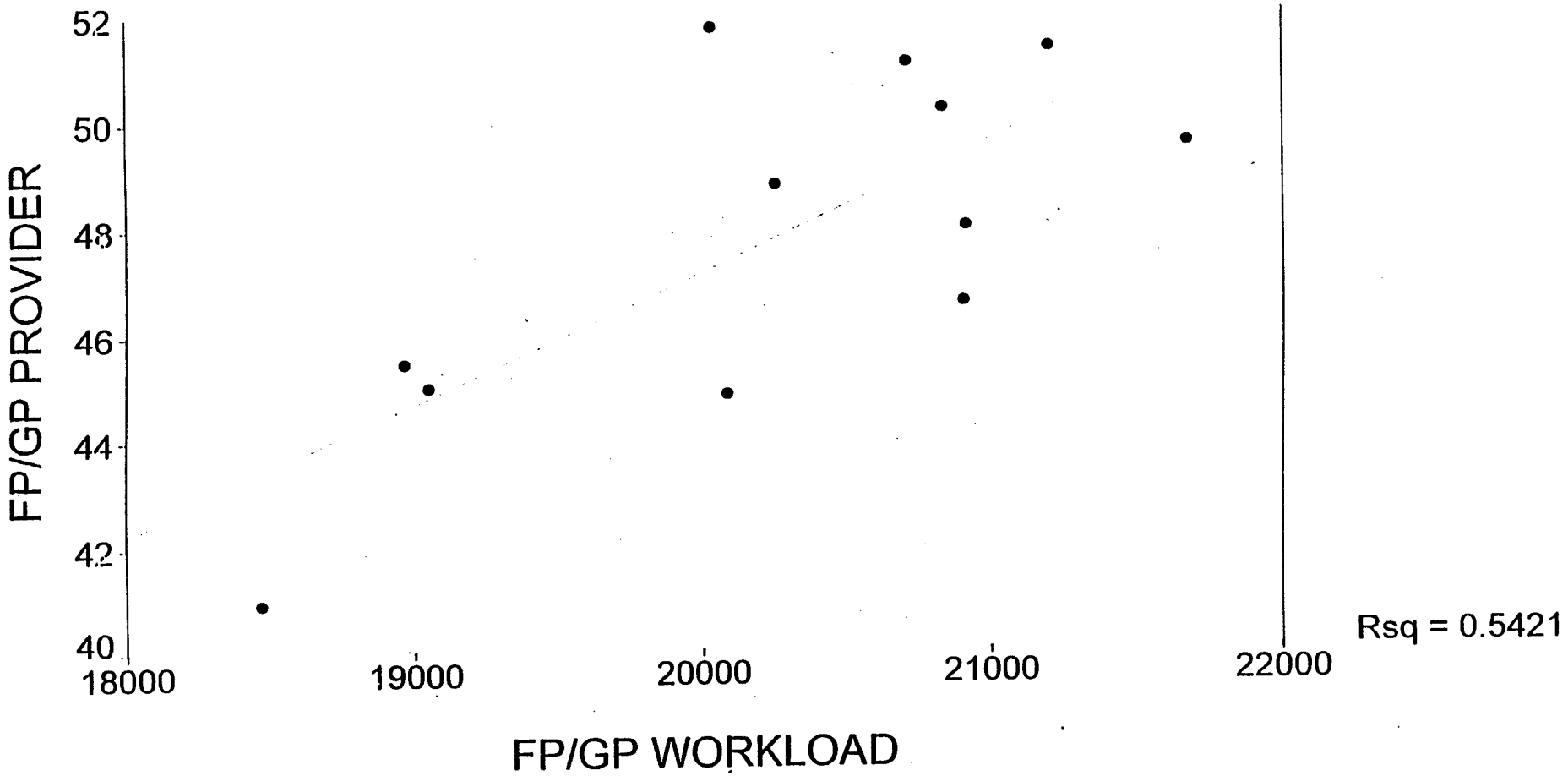
Emergency Medicine Regression



Fort Campbell
Otolaryngology Regression

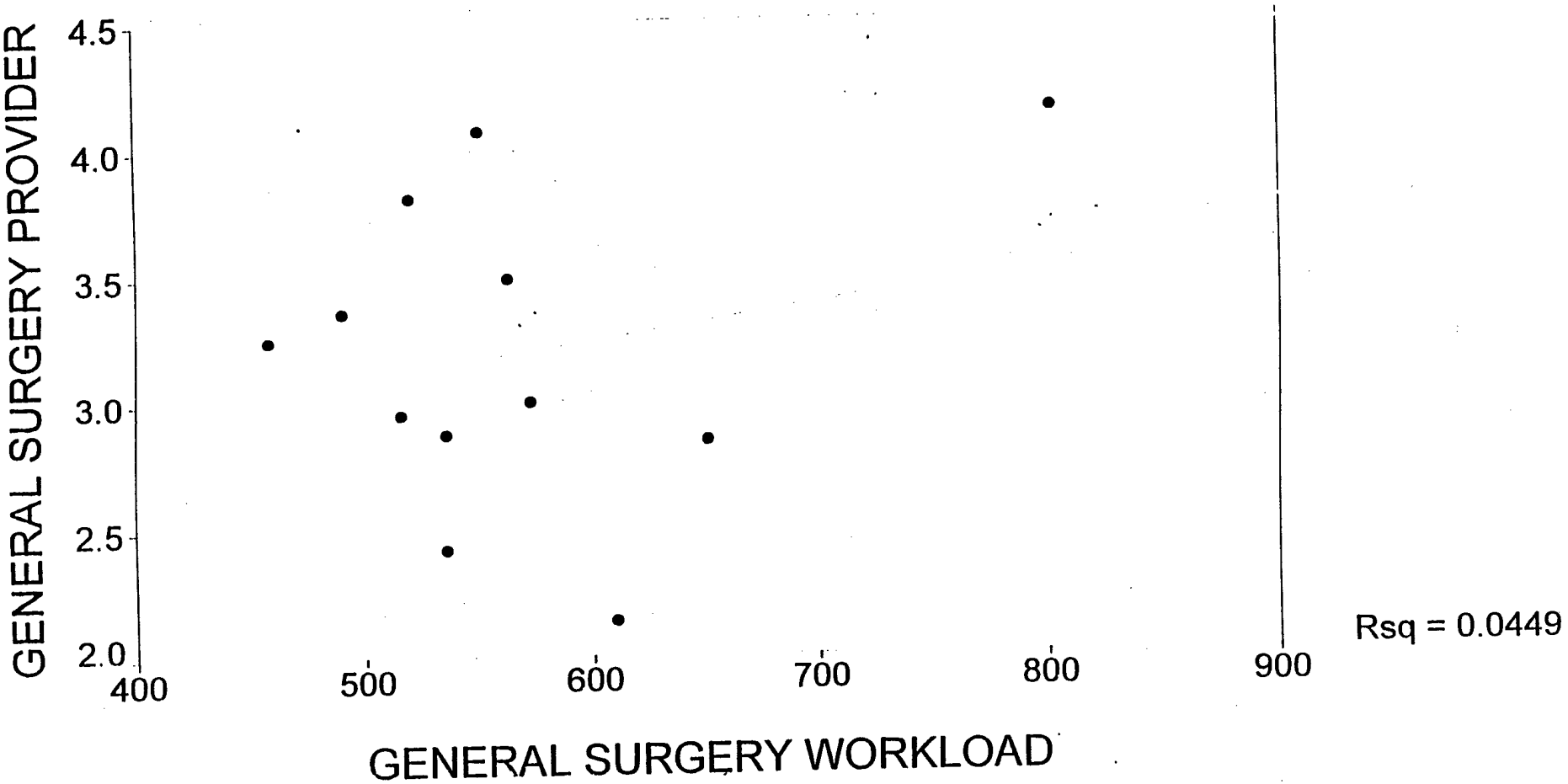


Fort Campbell
FP/GP Regression

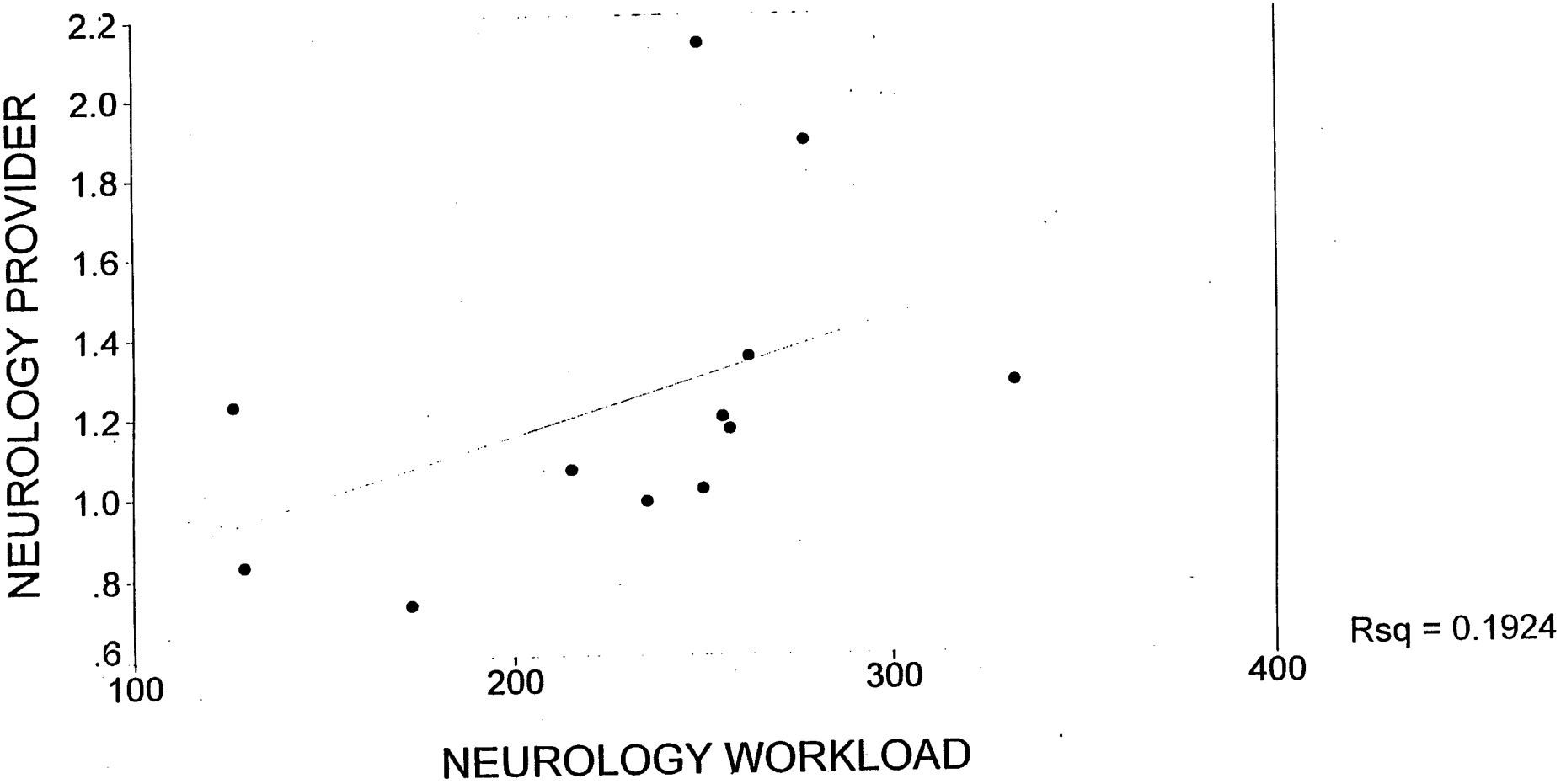


Fort Campbell

General Surgery Regression

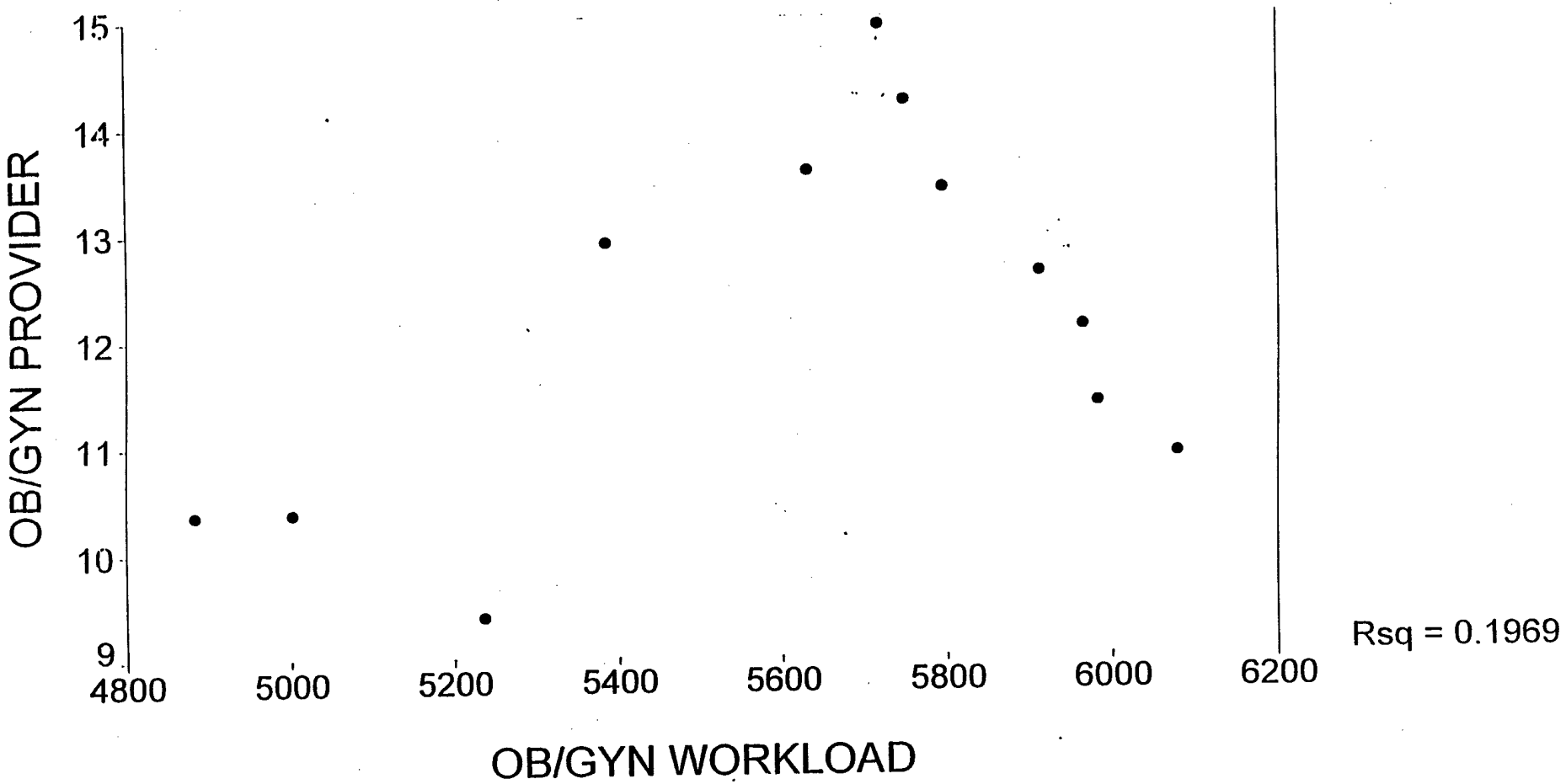


Fort Campbell
Neurology Regression

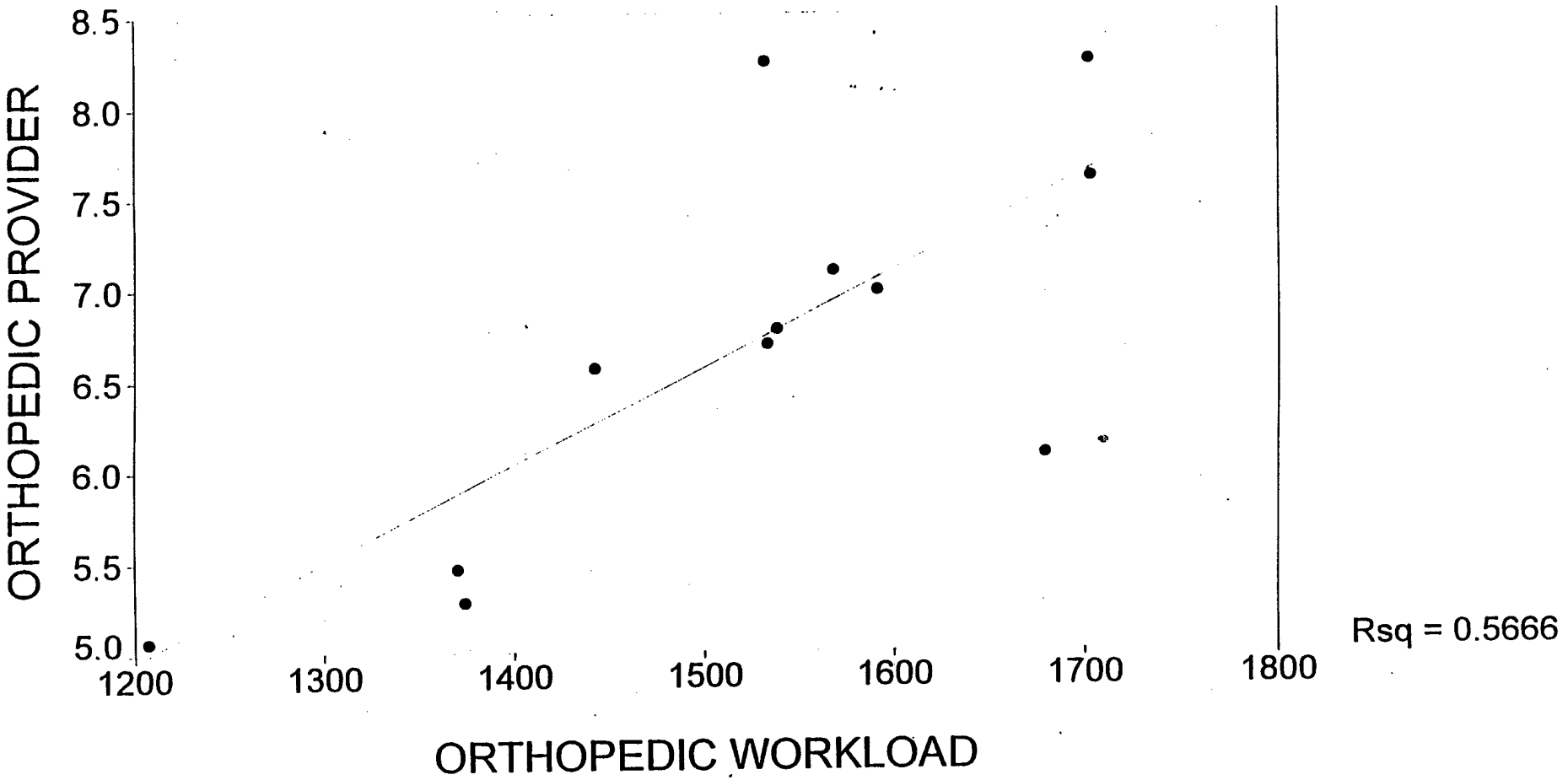


Fort Campbell

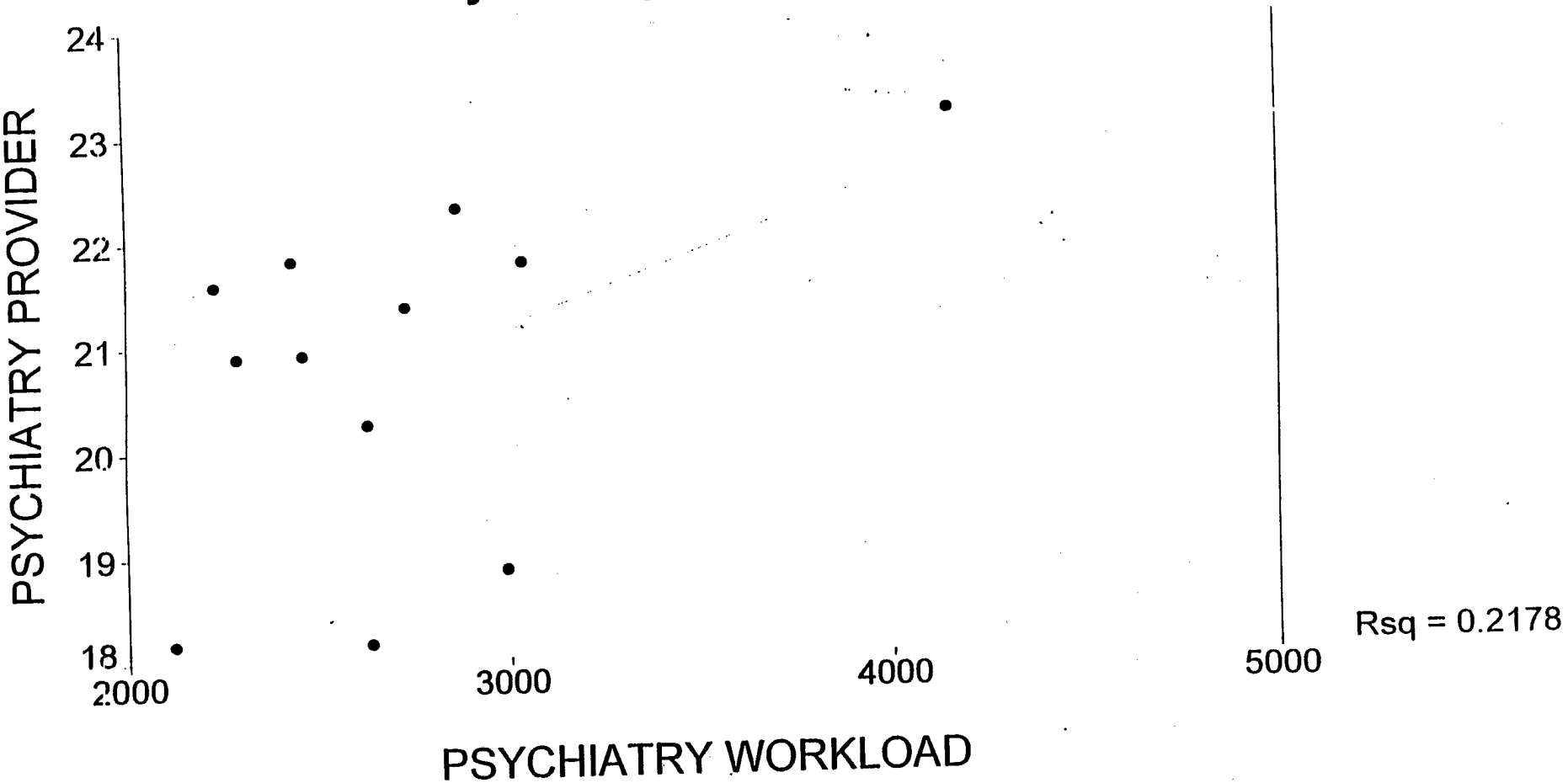
Obstetric / Gynecology Regression



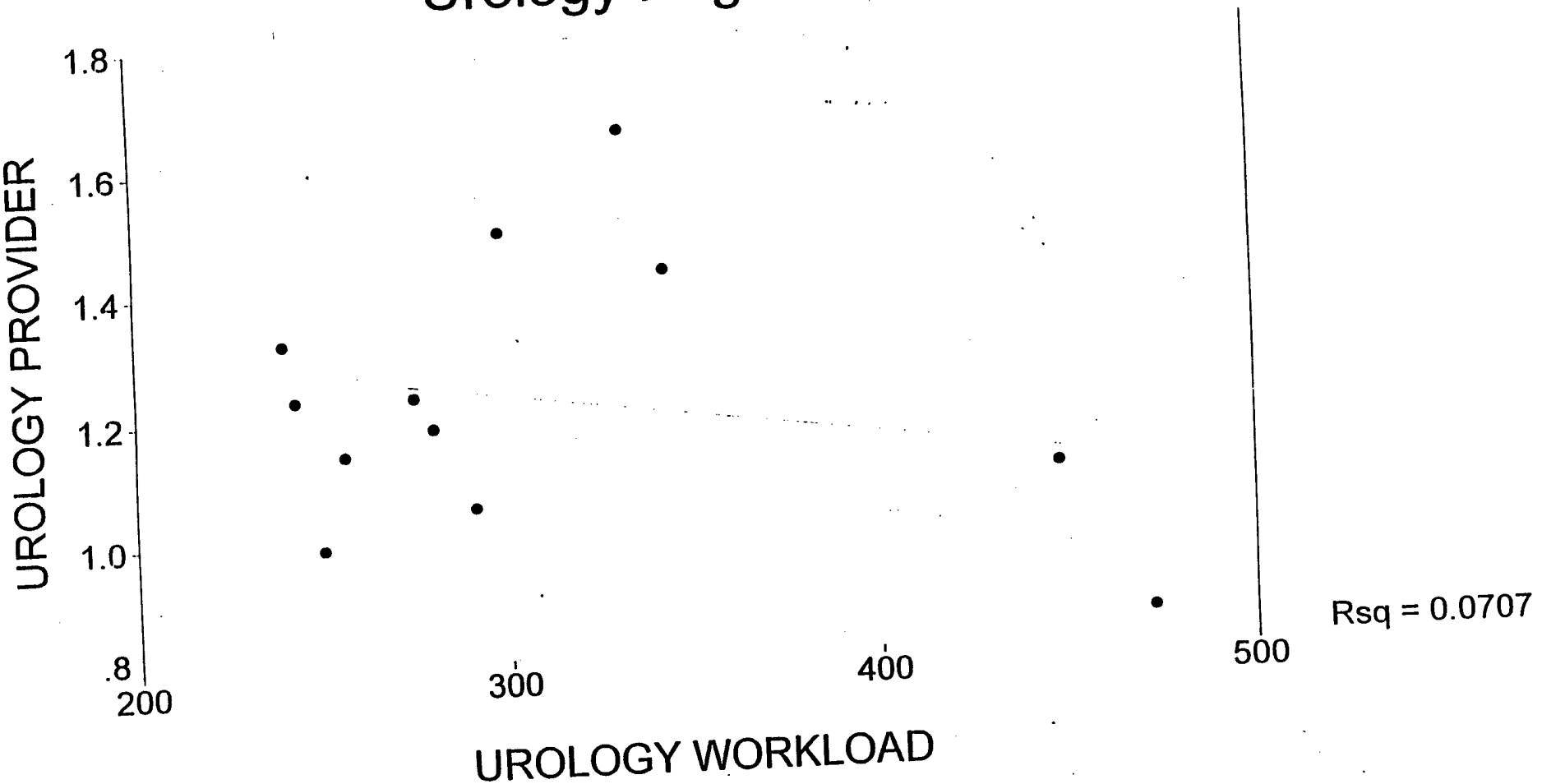
Fort Campbell
Orthopedic Regression



Fort Campbell
Psychiatry Regression

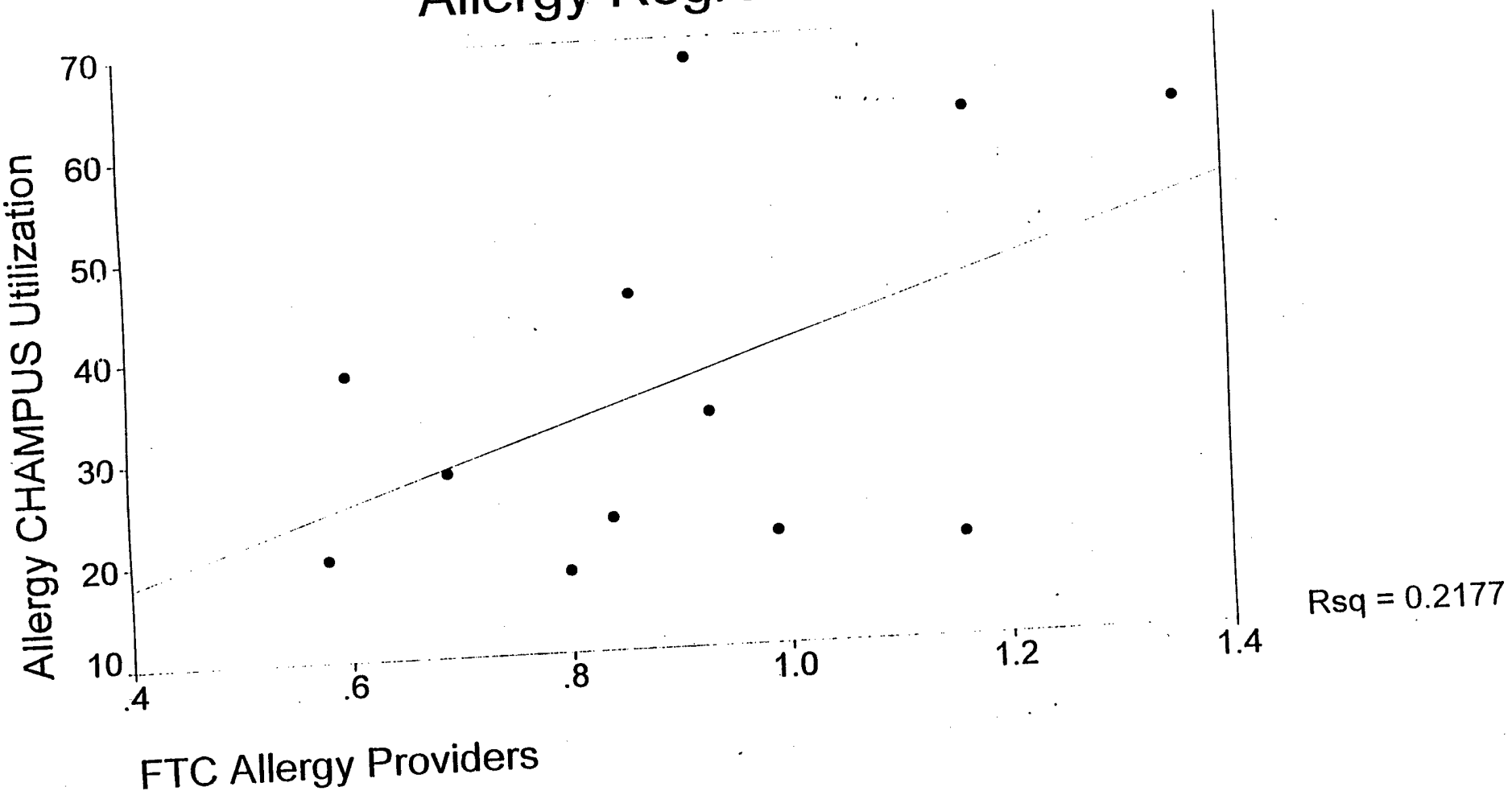


Fort Campbell
Urology Regression

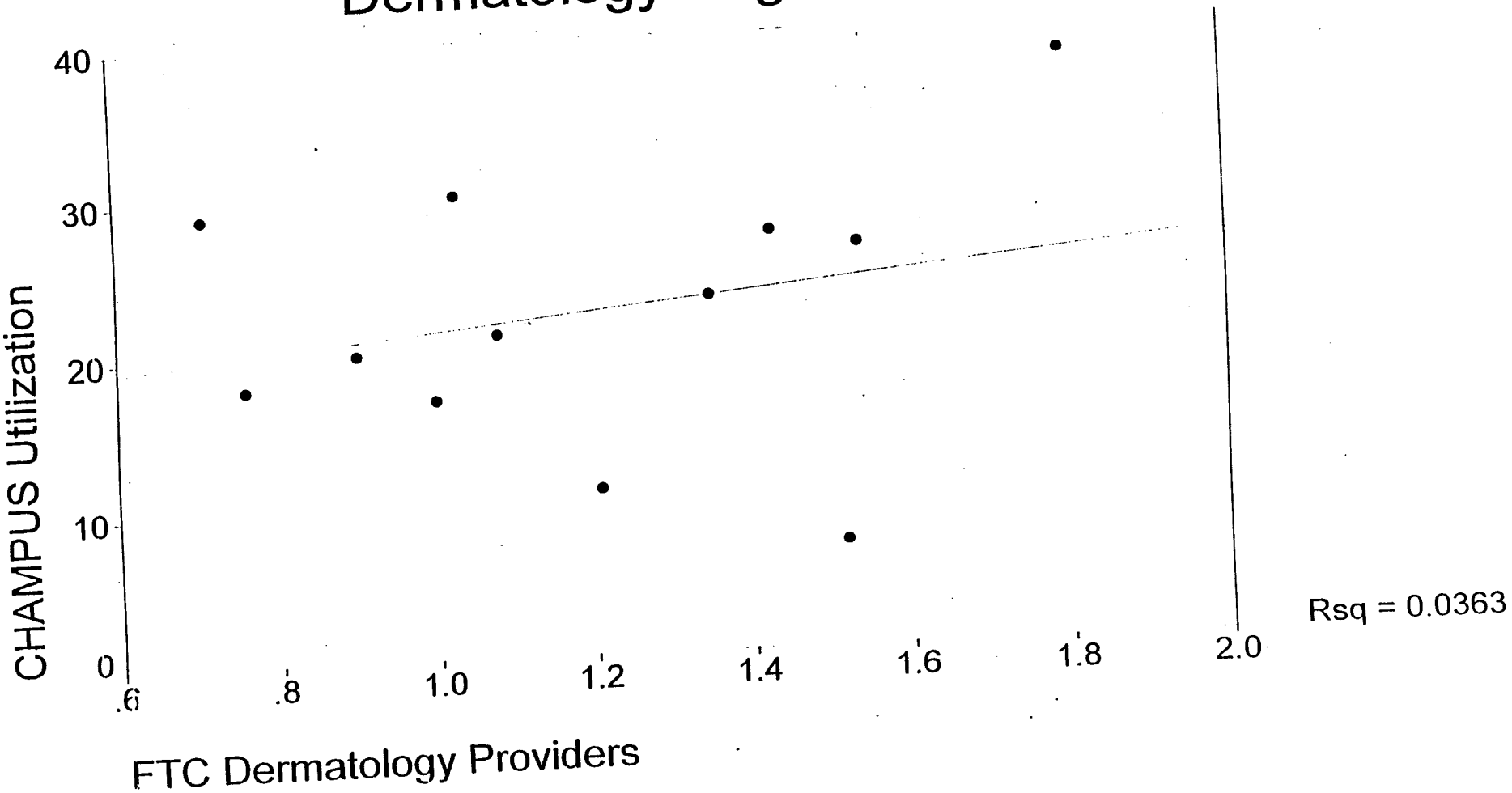


CHAMPUS

Allergy Regression

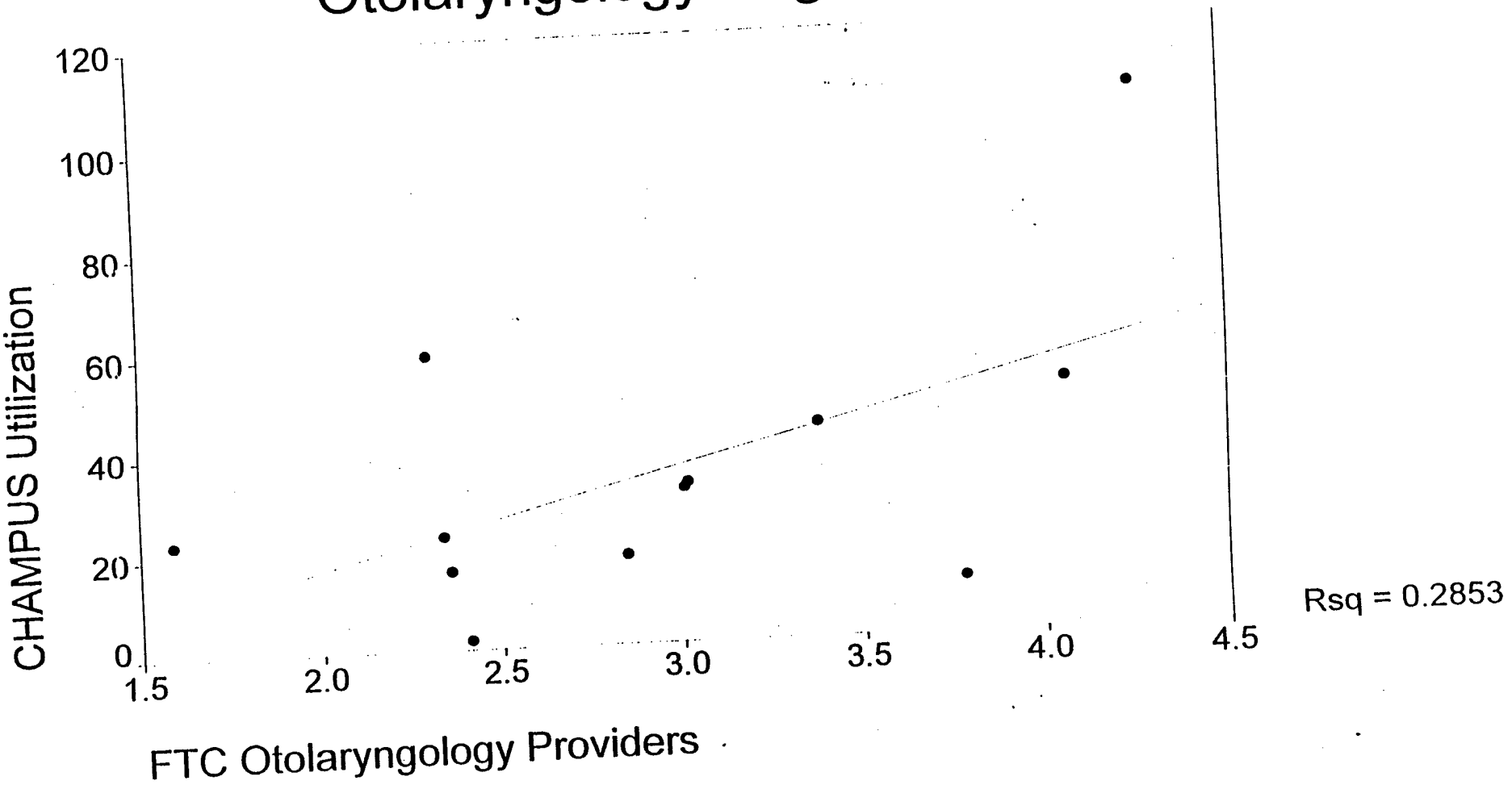


CHAMPUS
Dermatology Regression



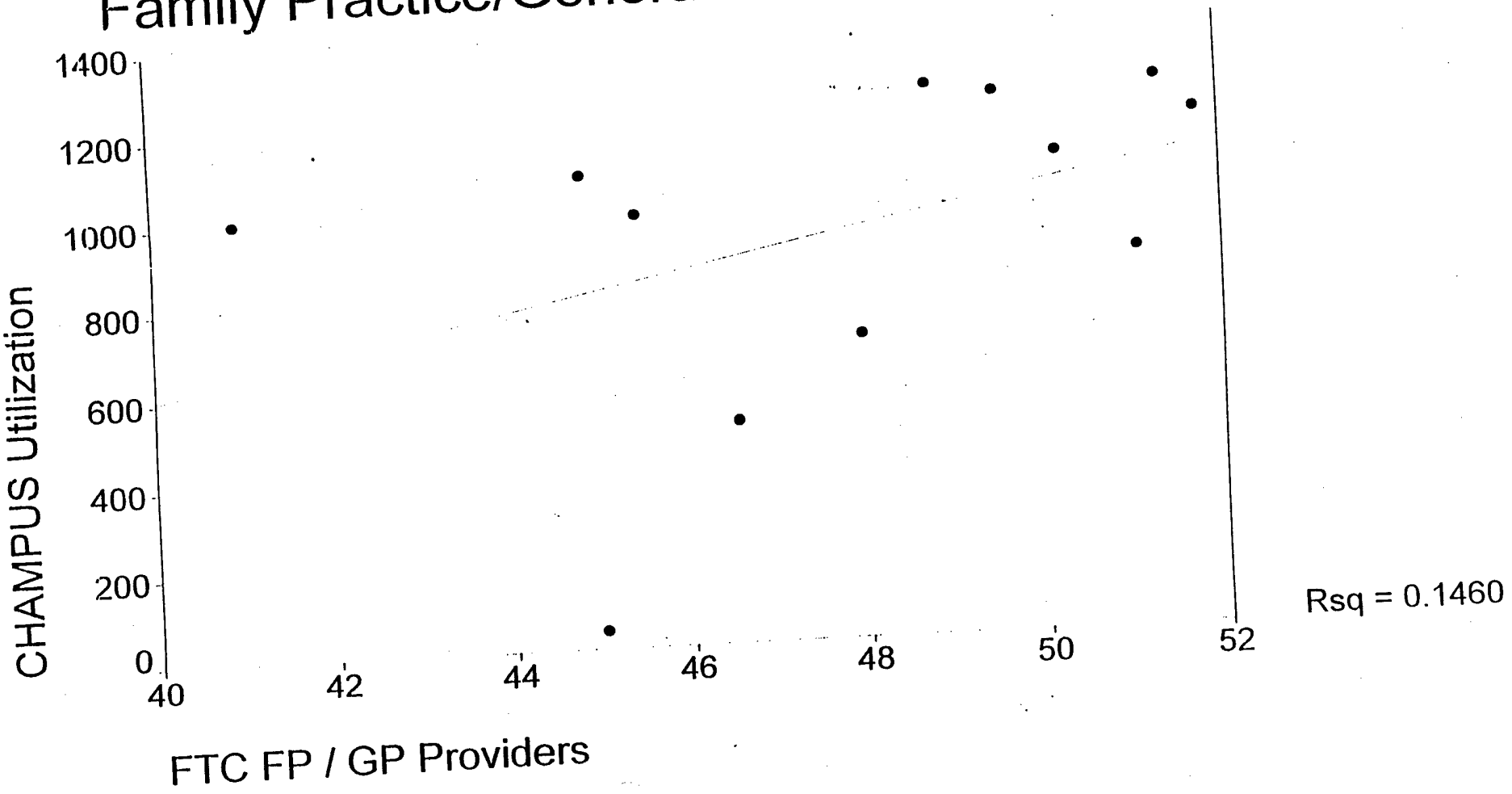
CHAMPUS

Otolaryngology Regression



CHAMPUS

Family Practice/General Practice Regression



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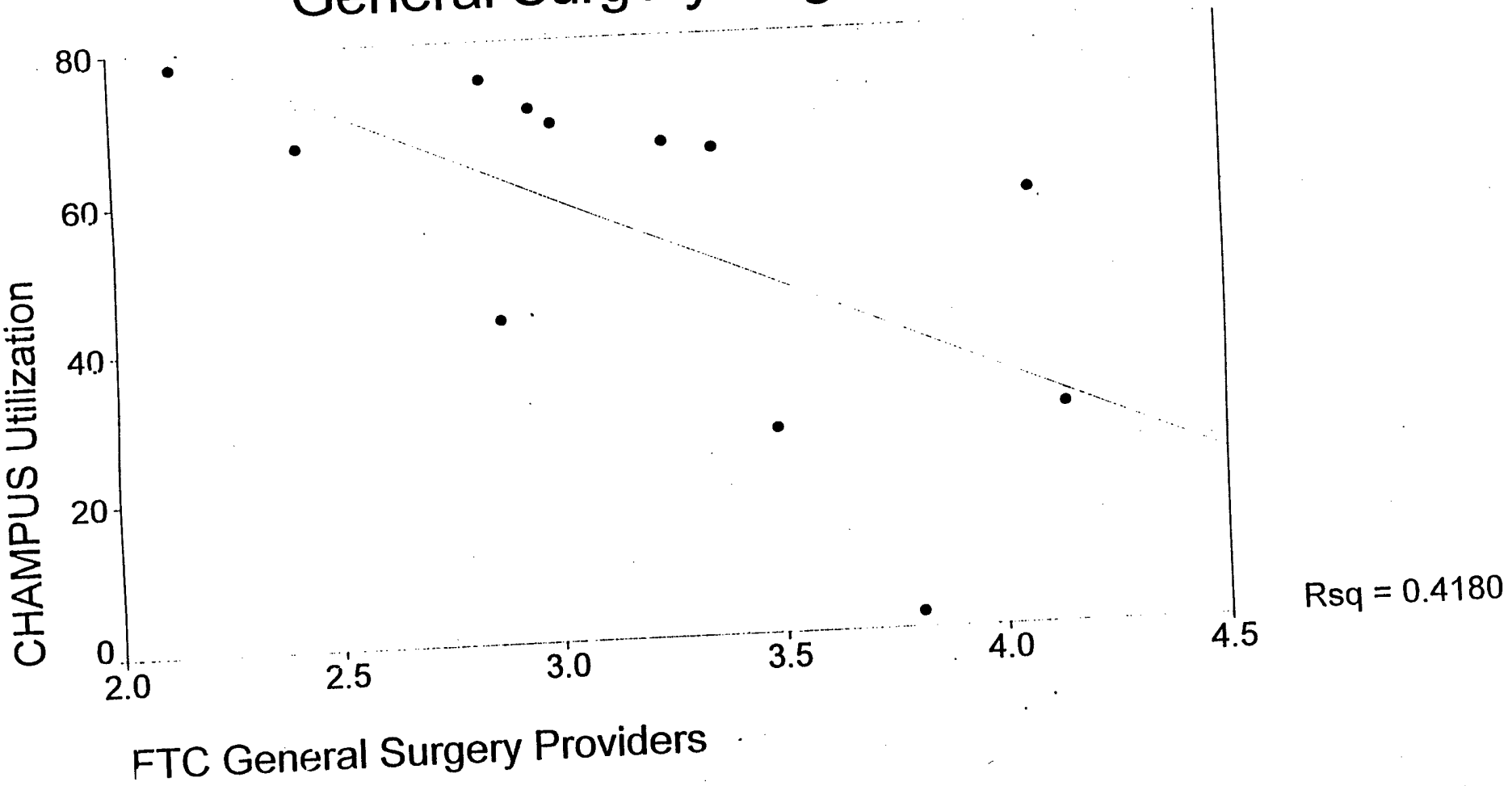
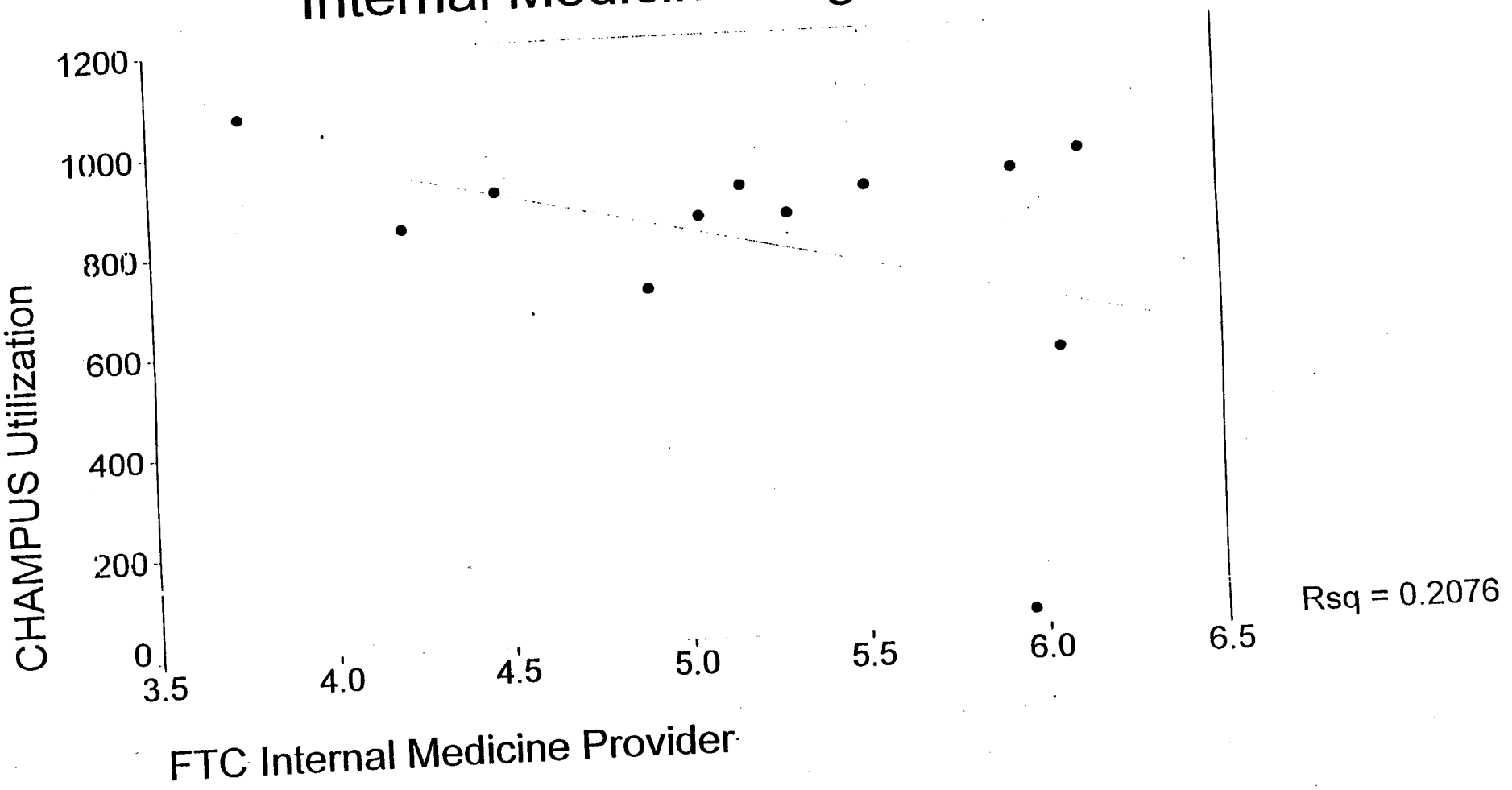
General Surgery Regression

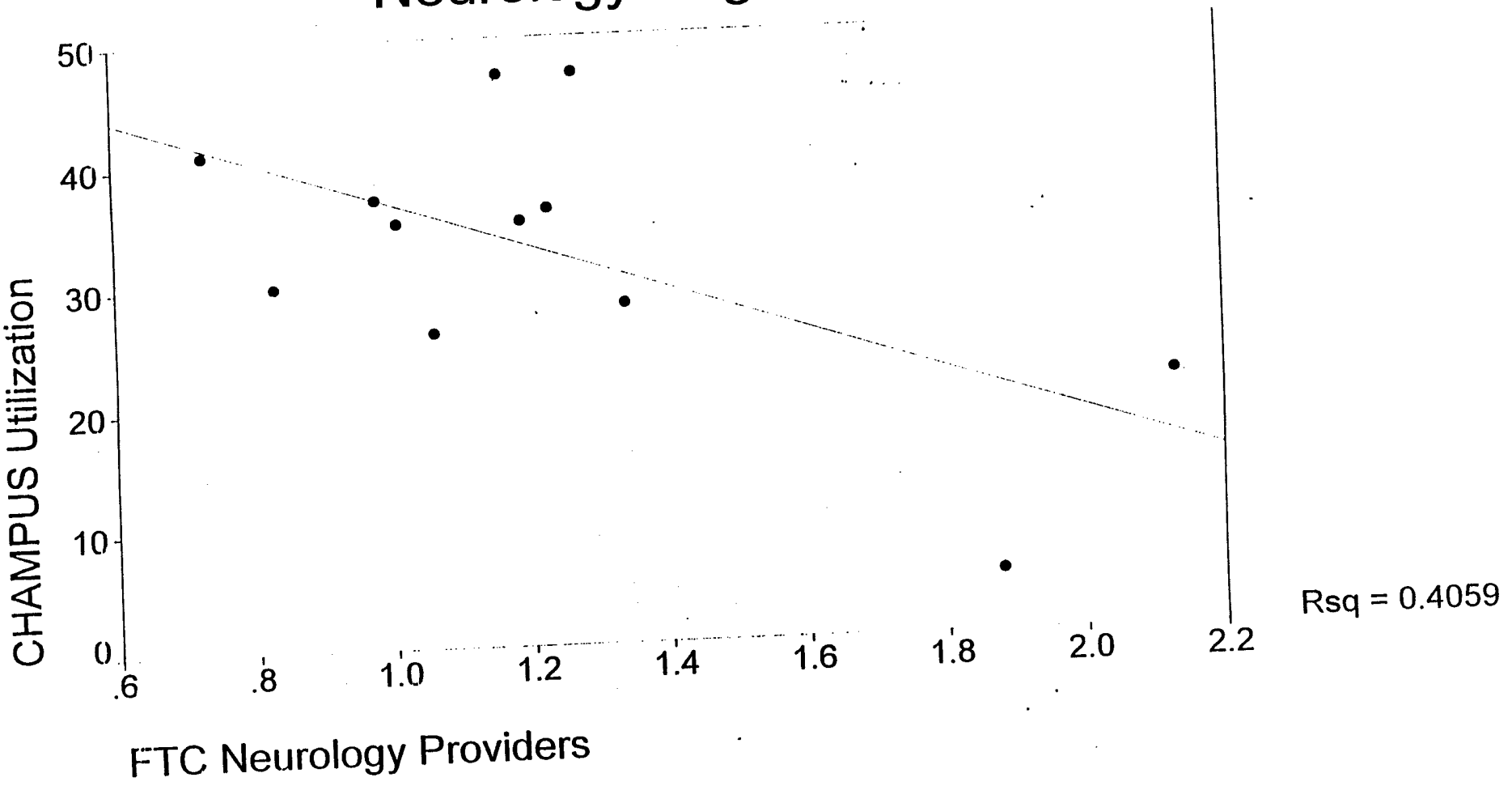


CHAMPUS

Internal Medicine Regression



CHAMPUS
Neurology Regression



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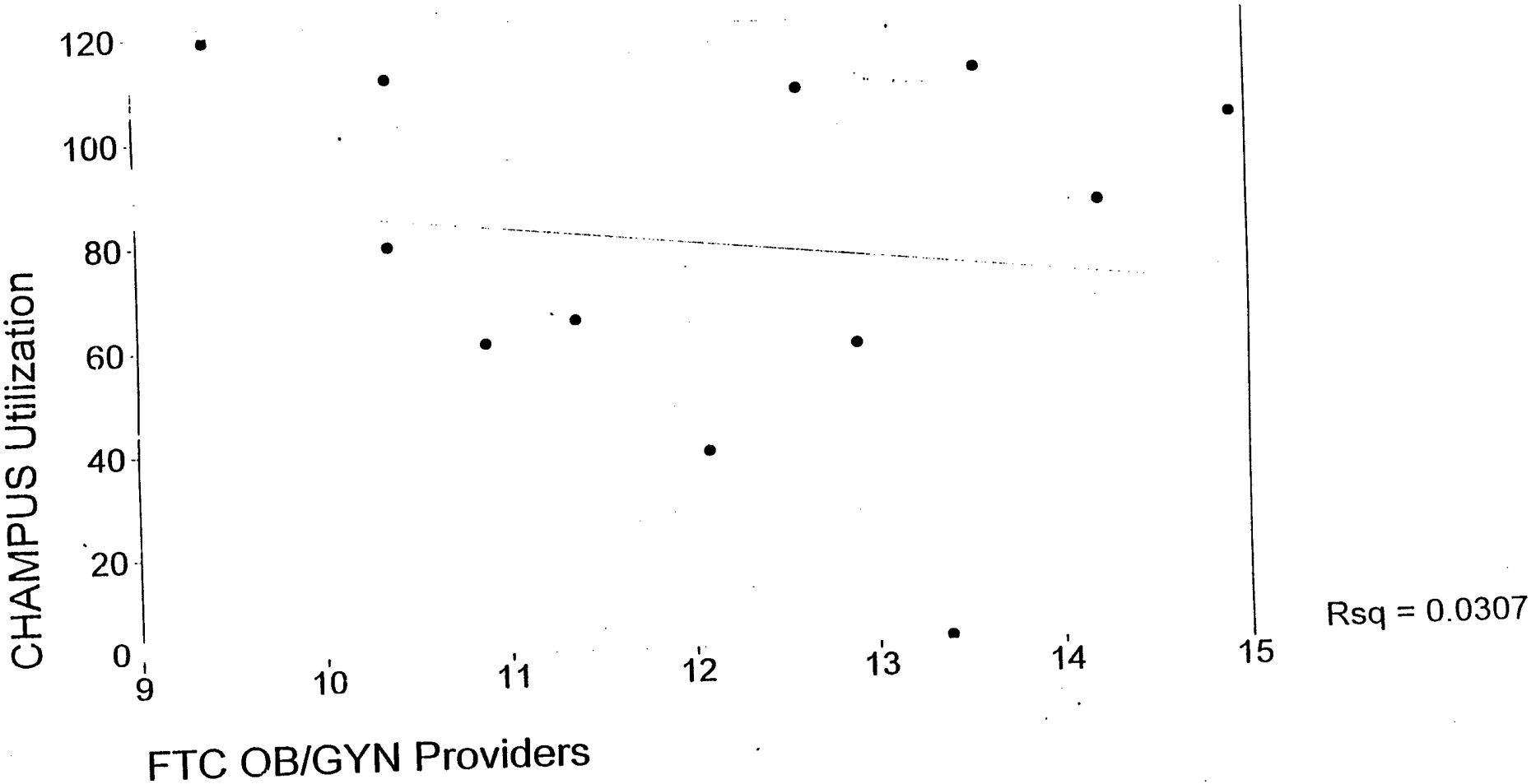
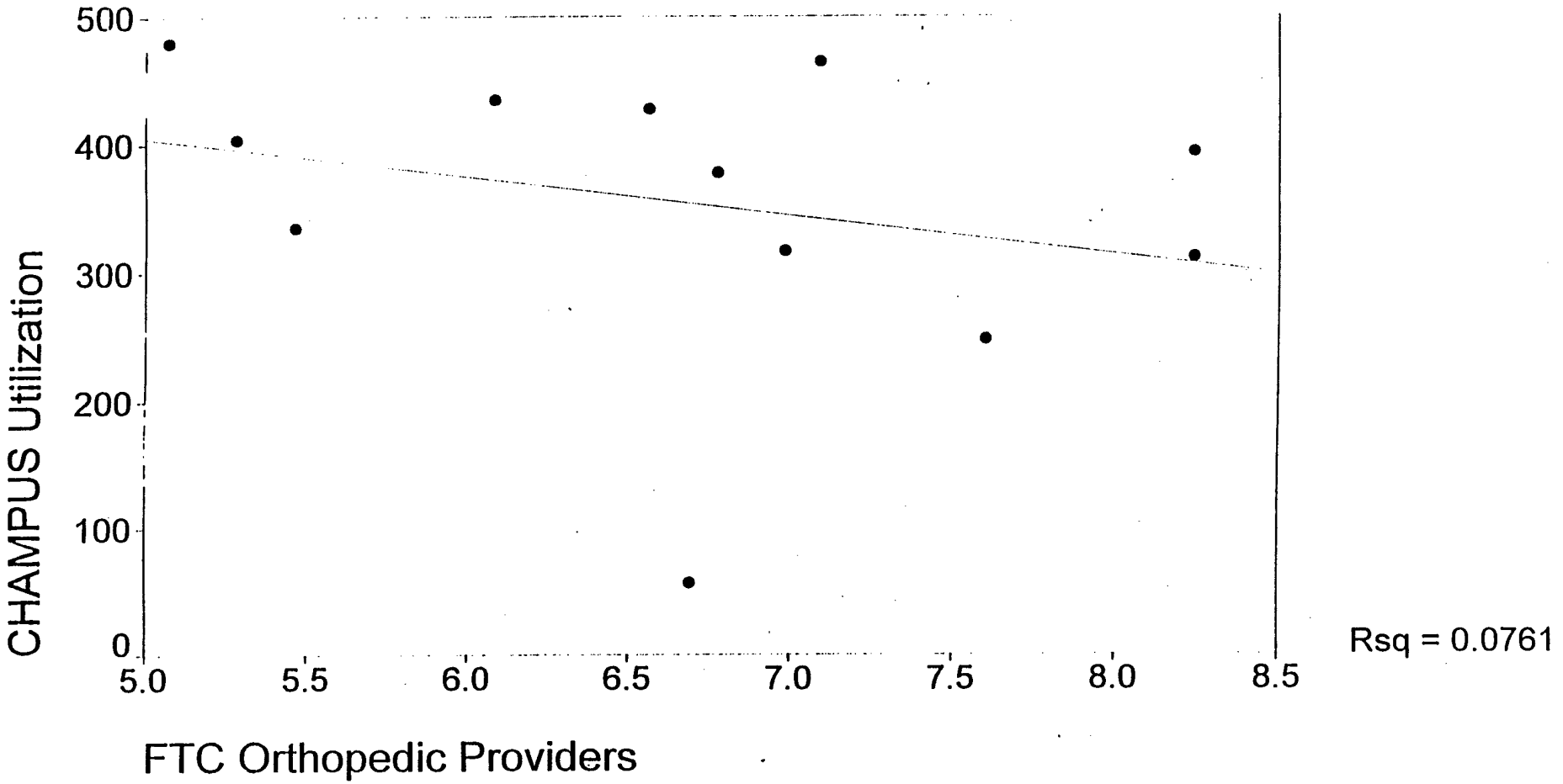
OB/GYN Regression



CHAMPUS

Orthopedics Regression



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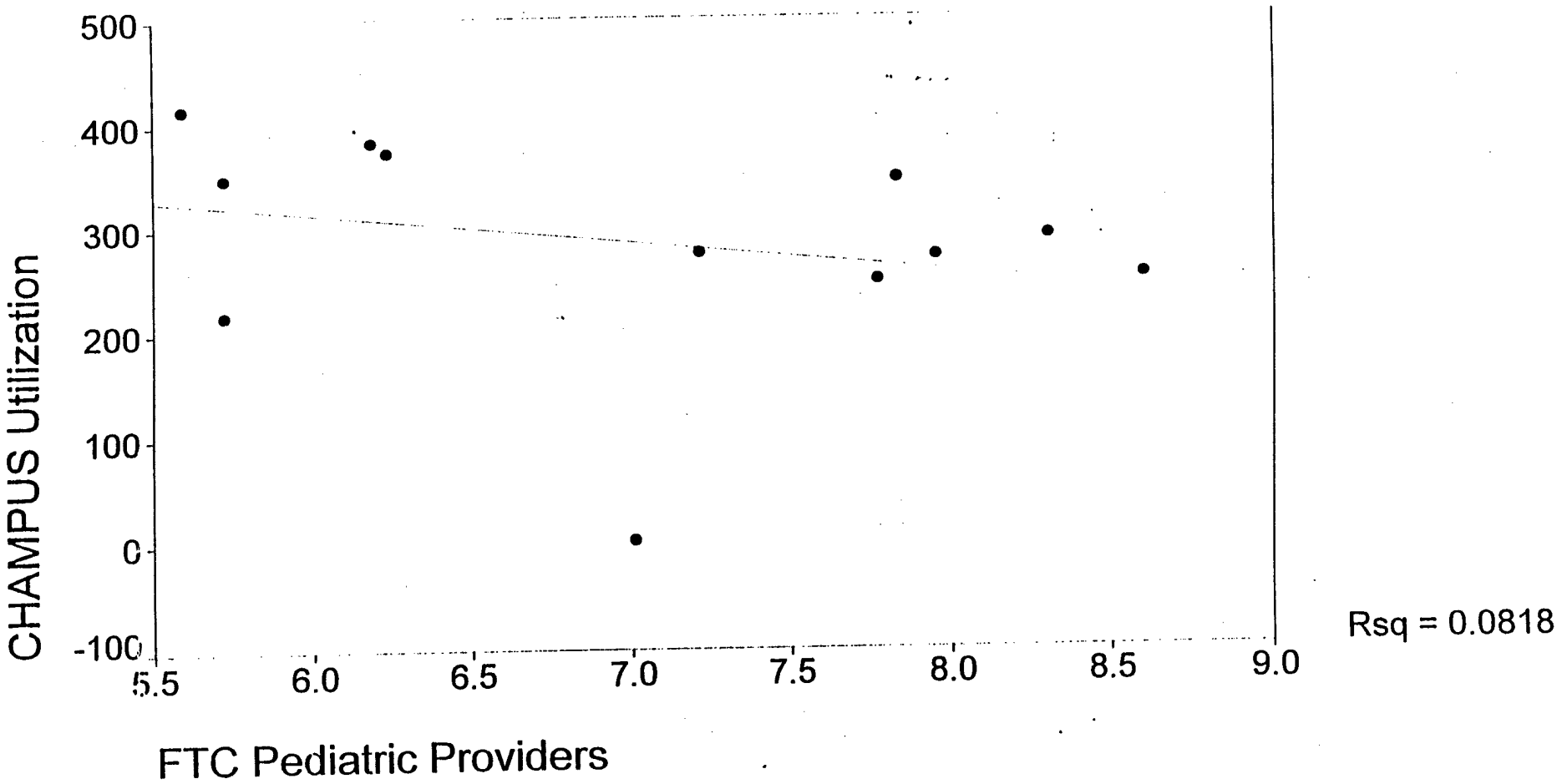
Pediatric Regression



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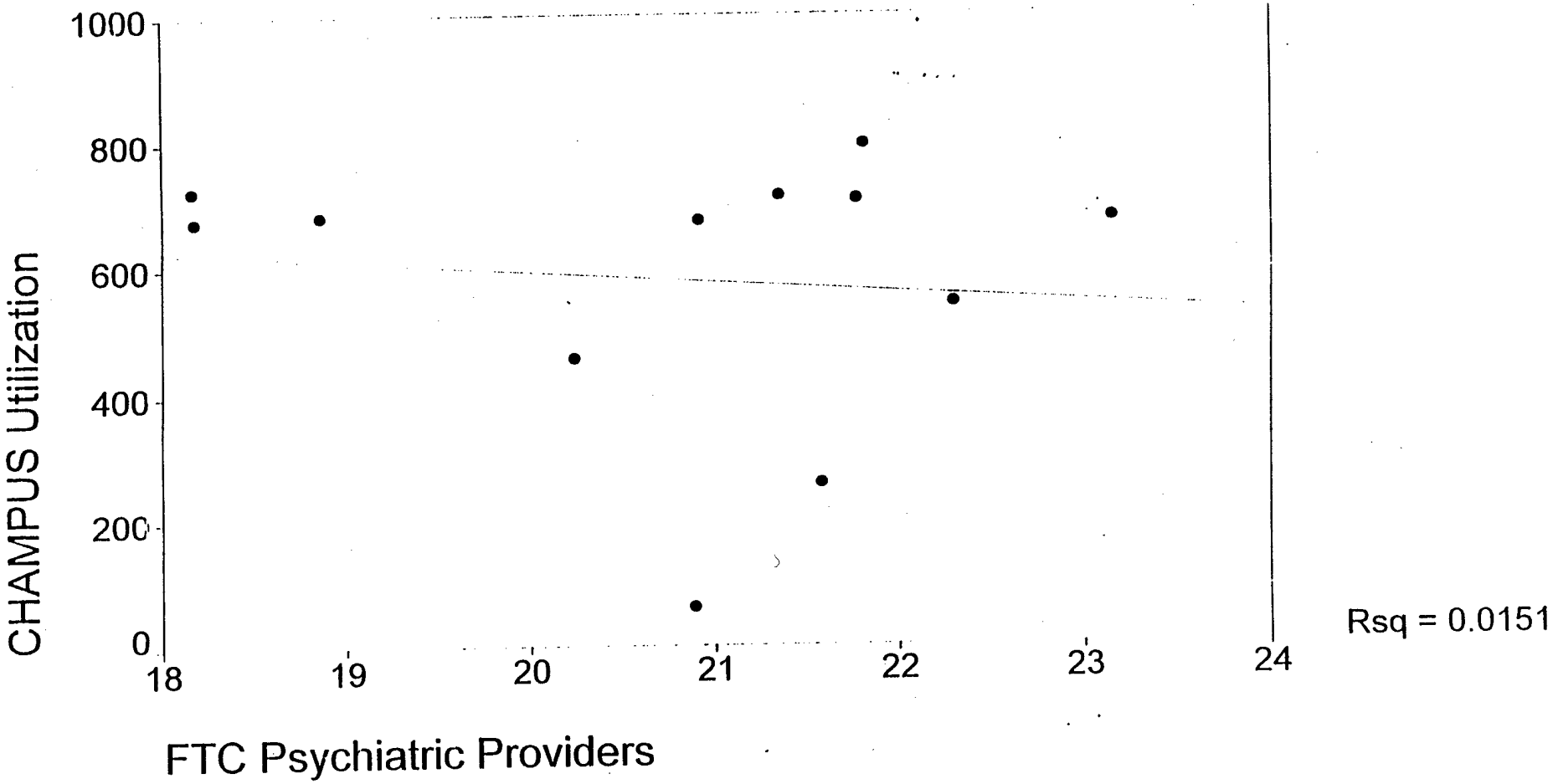
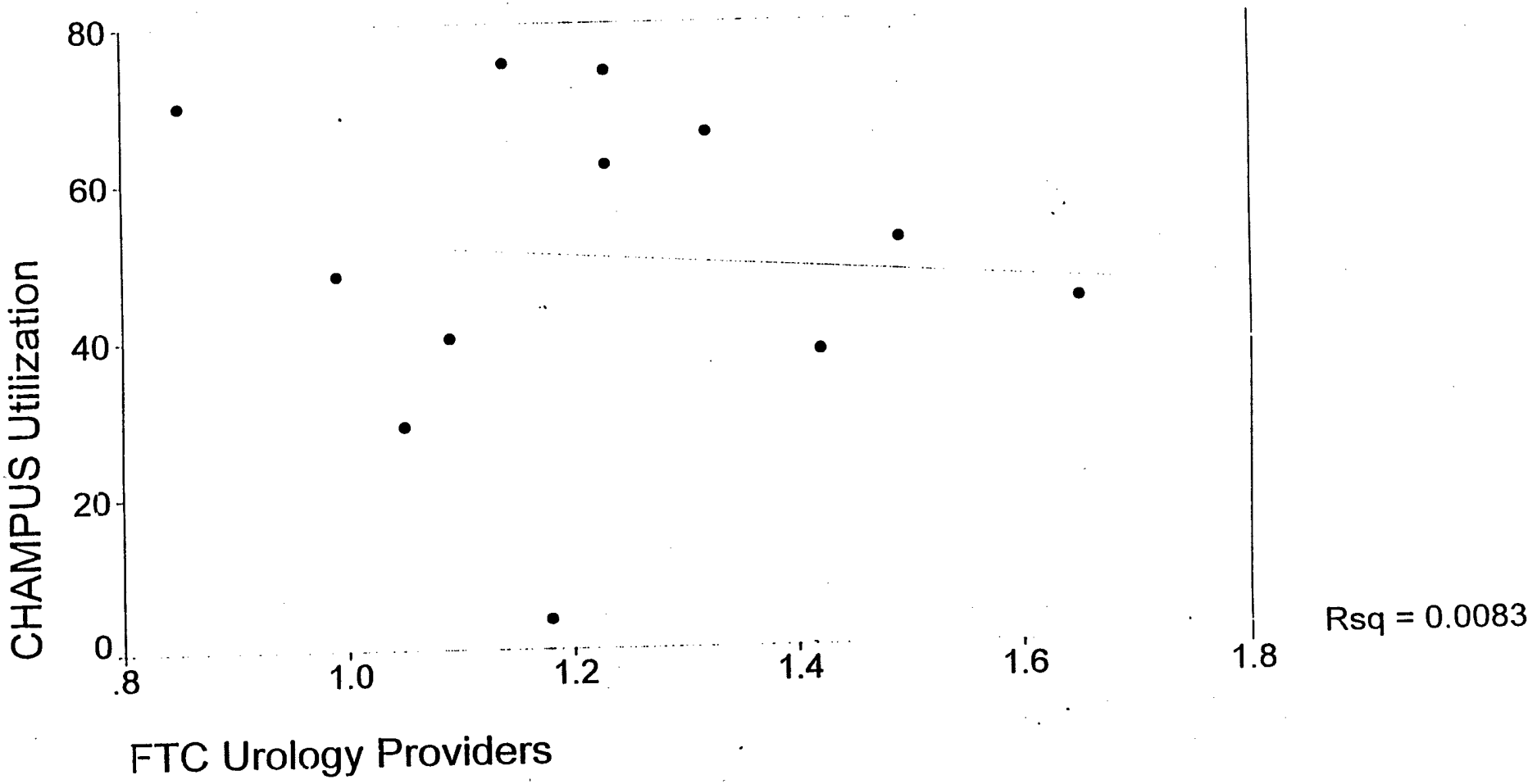
Psychiatric Regression



CHAMPUS

Urology Regression



APPENDIX G
FT. CAMPBELL POPULATION DEMOGRAPHICS

Fort Campbell Catchment Area's Demographic Characteristics

Gender	Age Group	Active Duty	Active Duty Family	Guard / Reserve	Guard / Reserve Family	Retired	Retired Family	Survivor
Female	0 - 4	0	3780	0	24	0	161	9
	5 - 14	0	5141	0	47	0	1133	39
	15 - 17	0	742	0	13	0	682	21
	18 - 24	1148	3413	3	23	0	833	46
	25 - 34	1117	6290	1	29	18	273	23
	35 - 44	319	2421	3	22	112	1715	71
	45 - 64	23	343	0	7	67	4193	493
	65 +	0	35	0	1	6	1021	600
Female Total		**2607**	**22165**	**7**	**166**	**203**	**10011**	**1302**
Male	0 - 4	0	4123	0	27	0	157	6
	5 - 14	0	5316	0	49	0	1179	56
	15 - 17	1	744	1	7	0	679	29
	18 - 24	7624	501	43	7	6	842	39
	25 - 34	9703	278	30	3	84	20	12
	35 - 44	3248	117	6	5	1514	27	5
	45 - 64	285	28	9	1	4678	21	0
	65 +	0	7	0	0	1843	2	5
Male Total		**20861**	**11114**	**89**	**99**	**8125**	**2927**	**152**
Total		**23468**	**33279**	**96**	**265**	**8328**	**12938**	**1454**

APPENDIX H
REFERENCE LIST AND BIBLIOGRAPHY

REFERENCE LIST

Reference	Source
CHAMPUS workload data for Fort Campbell's catchment area for FY 96.	BACH/PASBA
Fort Campbell's workload data for FY 97	BACH/PASBA
Milliman and Robertson expected utilization for Fort Campbell's catchment area (optimally and unmanaged models) for all beneficiaries, active duty only, and active duty and dependents.	Milliman & Robertson
Automated Staffing Assessment Model (ASAM) - Bedded Facility. Workload reporting period FY96-FY97.	MEDCOM
Health Promotion and PPIP awareness plans for FY97-98	BACH
Primary Care Teams	BACH
Primary Care Product Line IPR (13-5-97)	BACH
Primary Care IPR (8-7-97)	BACH
1996 Patient Guide to BACH	BACH
Various Primary Care Product Line IPR Minutes	BACH
Integration of Health Promotion into Primary Care	BACH
DMIS Summary System (Beneficiary Pop)	BACH
Business Plan FY 97	BACH
Army Regulation 350-4	MEDCOM

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